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FARM MACHINERY LABORATORY MANUAL

SCOATES

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INSTRUCTIONS TO STUDENTS.

The first exercises and in fact the largest part of those in the book are to get the student familiar with the different parts of the machine, the principal differences in the various makes of the same type of machine and the function of each part. For these exercises there are questions asked, the answer to which the student must determine and jot down aside of the question. Blank spaces are left for these notations, or, if no blank space is left, the part of the question not applying to the machine can be crossed out. Sufficient machines of the same kind should be gone over to fill out all of the report sheets for that machine. After the report blanks for one kind of machine, such as walking plows or mowers, etc., are filled out, then the student should present himself to the instructor for a quiz on that machine. A grade will then be given.

In the case of assembling and testing exercises the student does the exercise as per instructions in the manual and additional instructions from the instructor. All results should be carefully tabulated in manual.

Each student will need a manual and a pocket tape. As soon as getting the manual the student should write his name on it in ink thus insuring its return in case of loss. Not more than three students should work together if all are to get the maximum benefit of the course.

In using the machinery and apparatus in the laboratory, take care of it as well as you would if it were your own. Keep in mind that, while the machinery is loaned to us and the apparatus belongs to the State, yet there are many other students coming after you and they too wish to have good machinery and apparatus to use.

Do not rush through your laboratory work or do not loaf. Work right along making each moment count for the most. Get all you can out of the laboratory work. Do not run to the instructor with every little question, but try to rely upon yourself. Remember that the laboratory work is built on the assumption that you have the class room work in good shape; if you fail there, you are lost here.

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WALKING PLOWS.

General Information. **Exercise No. 1.**

Trade name and number?_______________________

Manufacturer ________________________________

Address? ___________________________________

Size?______________inches.

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is the moldboard polished?___________

Is shin reinforced?_____________________________

Share.

Point reinforced?_________________

Bearing at wing?_____________inch.

How many bolts hold share on?__________________

Amount of vertical suction?_________________inch

Amount of horizontal suction?_______________inch

Landside.

*High, medium, low?

Heel reinforced?____________________

Reinforcement removable? ______________________

Is it perpendicular to plane of plow bottom?______

Frog.

Material—steel, cast iron or malleable?

Is it large or small?_____________________________

Beam.

Material—Wood or steel?

Height of hitch? { maximum ______________inches.
minimum ______________inches. }

Clevis well made?____________________

Can adjustment of hitch in horizontal and vertical directions be easily made?__________________

Handles.

Material—wood or steel?_________________________

How connected to plow?__________________________

Can they be adjusted?___________________________

*High above 5 in.; Medium 4 in. to 5 in.; low less than 4 in.

WALKING PLOWS.

General Information. **Exercise No. 1.**

Trade name and number?______________________

Manufacturer ________________________________

Address? ____________________________________

Size?_____________inches.

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is the moldboard polished?__________

Is shin reinforced?_____________________________

Share.

Point reinforced?_______________

Bearing at wing?____________inch.

How many bolts hold share on?_______________

Amount of vertical suction?________________inch

Amount of horizontal suction?______________inch

Landside.

*High, medium, low?

Heel reinforced?__________________

Reinforcement removable? ____________________

Is it perpendicular to plane of plow bottom?______

Frog.

Material—steel, cast iron or malleable?

Is it large or small?__________________________

Beam.

Material—wood or steel?

Height of hitch? { maximum _____________inches.
minimum _____________inches.

Clevis well made?_________________

Can adjustment of hitch in horizontal and vertical directions be easily made?________________

Handles.

Material—wood or steel?______________________

How connected to plow?_______________________

Can they be adjusted?_________________________

*High above 5 in.; Medium 4 in. to 5 in.; low less than 4 in.

WALKING PLOWS.

General Information. **Exercise No. 1.**

Trade name and number?--------------------

Manufacturer ----------------------------

Address? -------------------------------

Size?--------------inches.

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Type—stubble, sod or general purpose?

Which way is the moldboard polished?-----------

Is shin reinforced?---------------------------

Share.

Point reinforced?----------------

Bearing at wing?------------inch.

How many bolts hold share on?-----------------

Amount of vertical suction?-----------------inch

Amount of horizontal suction?--------------inch

Landside.

*High, medium, low?

Heel reinforced?------------------

Reinforcement removable? --------------------

Is it perpendicular to plane of plow bottom?------

Frog.

Material—steel, cast iron or malleable?

Is it large or small?-------------------------

Beam.

Material—wood or steel?

Height of hitch? { maximum -------------inches.
{ minimum -------------inches.

Clevis well made?-----------------

Can adjustment of hitch in horizontal and vertical directions be easily made?----------------

Handles.

Material—wood or steel?--------------------

How connected to plow?-----------------------

Can they be adjusted?-------------------------

Miscellaneous.

Which of the plows studied do you prefer?--------

*High above 5in.; Medium 4 in. to 5 in.; low less than 4 in.

WALKING HILLSIDE PLOWS.

General Information. **Exercise No. 2.**

Trade name and number?____________________

Manufacturer? ______________________________

Address? ___________________________________

Size? _______________________inches.

Moldboard.

Material—steel, soft centered steel or chilled cast iron?_______________

Which way is moldboard polished?_______________

Is shin reinforced?______________

How does the shape differ from that of a common walking plow? _________________________

Share.

Point reinforced?_________________

Bearing at wing?_________________inch.

How many bolts hold share on?__________________

Amount of vertical suction?_________________inch

Amount of horizontal suction?________________inch.

Landside.

High, medium or low?

Heel reinforced?__________________

Frog.

Material—steel, cast iron or malleable?

Is it large enough for its purpose?______________

Can locking device be adjusted to wear?__________

Is hinge at point substantial and easily repaired?

____

Beam.

Material—wood or steel.

Height of hitch? { maximum ______________inches.

{ minimum ______________inches.

Clevis well made?_____________

Can adjustment of hitch in horizontal and vertical directions be easily made?___________________

Handles.

Material—wood or steel.

How connected to plow?_________________________

Can they be adjusted?__________________________

Miscellaneous.

Do you understand how the plow is operated and what are its advantages?________________________

WALKING MIDDLEBREAKER.

General Information. **Exercise No. 3.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? __________________________________

Size?______________inches.

Moldboard.

Material—steel, soft centered steel or chilled cast iron?

Which way is moldboard polished?______________

Is shin reinforced?_________________

Share.

Point reinforced?__________________

Bearing at wing?___________________inch.

How many bolts hold share on?__________________

Frog.

Material—steel, cast iron or malleable?

Is it large enough for its purpose?______________

Rudder.

Has middlebreaker a rudder?___________________

Is it reinforced?________________

Beam.

Material—wood or steel?

Height of hitch? { maximum ______________inches.
{ minimum ______________inches.

Clevis well made?___________________________

Can adjustment of hitch in horizontal and vertical directions be easily made?___________________

Handles.

Materials—wood or steel?

How connected to plow?_______________________

Can they be adjusted?__________________________

WALKING MIDDLEBREAKER.

General Information. **Exercise No. 3.**

Trade name and number?--------------------

Manufacturer? ------------------------------

Address? ----------------------------------

Size?--------------inches.

Moldboard.

Material—steel, soft centered steel or chilled cast iron?

Which way is moldboard polished?---------------

Is shin reinforced?------------------

Share.

Point reinforced?-------------------

Bearing at wing?------------------inch.

How many bolts hold share on?-----------------

Frog.

Material—steel, cast iron or malleable?

Is it large enough for its purpose?---------------

Rudder.

Has middlebreaker a rudder?-------------------

Is it reinforced?---------------

Beam.

Material—wood or steel?

Height of hitch? { maximum -------------inches.
minimum -------------inches.

Clevis well made?------------------------------

Can adjustment of hitch in horizontal and vertical directions be easily made?------------------

Handles.

Materials—wood or steel?

How connected to plow?----------------------

Miscellaneous.

Which of the middlebreakers studied do you prefer?

SUBSOIL PLOWS.

General Information. **Exercise No. 4.**

Trade name and number?------------------------

Manufacturer? --------------------------------

Address? -------------------------------------

Size—width of shoe?---------------inches; plowing depth?--------------inches

Shoe.

Material—steel, cast iron or chilled cast iron?

How fastened to landbar?---------------------

Point reinforced? ---------------------------

Amount of vertical suction?-----------------inch

Can suction be adjusted?------------

Landbar.

Heel reinforced? ------------------

Reinforcement removable? ----------

Standard.

Material—steel or cast iron?

Is standard sharp?------------------

Beam.

Material—wood or steel?

Height of hitch? { maximum -------------inches.
minimum -------------inches.

Clevis well made?-----------------------------

Can adjustment of hitch in horizontal and vertical directions be easily made?------------------

Has plow gauge shoe or wheel?------------------

Handles.

Material—wood or steel?

How connected to plow?-----------------------

Can they be adjusted?-------------------------

SUBSOIL PLOWS.

General Information. **Exercise No. 4.**

Trade name and number?------------------------

Manufacturer? --------------------------------

Address? -------------------------------------

Size—width of shoe?--------------inches; plowing depth?--------------inches

Shoe.

Material—steel, cast iron or chilled cast iron?

How fastened to landbar?--------------------

Point reinforced? ----------------------------

Amount of vertical suction?----------------inch

Can suction be adjusted?------------

Landbar.

Heel reinforced? -----------------

Reinforcement removable? ----------

Standard.

Material—steel or cast iron?

Is standard sharp?------------------

Beam.

Material—wood or steel?

Height of hitch? { maximum -------------inches.
{ minimum -------------inches.

Clevis well made?-----------------------------

Can adjustment of hitch in horizontal and vertical directions be easily made?------------------

Has plow gauge shoe or wheel?-----------------

Handles.

Material—wood or steel?

How connected to plow?-----------------------

Can they be adjusted?--------------------------

Miscellaneous.

Do you understand how the plow is operated?-----

Which of the plows do you prefer?---------------

SULKY AND GANG MOLDBOARD PLOWS.

General Information. **Exercise No. 5.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? __________________________________

How many bottoms?___________________________

Size of bottoms?__________________inches

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is moldboard polished?______________

Is shin reinforced?___________________________

Share.

Point reinforced? ____________________________

Bearing at wing?___________________________inch

How many bolts hold share on?_________________

Amount of vertical suction?________________inch

Amount of horizontal suction?______________inch

How can suction be varied?___________________

Landside.

With or without landside?

Length?____________________inches

High, medium or low?

Frog.

Material—steel, cast iron or malleable?

Is it large or small?__________________________

Beam.

Frame or beam hitch?

Height of hitch? (plow bottom on floor)_____inches

Clevis well made?____________________________

Frame. (Answer for frame plow).

Is frame strong and rigid enough to withstand the strains of plowing?------------------------
How many bails?--------------------------------
Are bearings of ample size?--------------------
Can they be easily removed?------------------
How are the wheels attached to the frame?--------
Is the plow self leveling?---------------------

Wheels.

Wheels substantially attached to beam?-----------
Rear furrow wheel set over from landside?---inches
Can this be adjusted?--------------------------
All wheels adjustable?------------------------
Has rear wheel locking device?-----------------
Why are furrow wheels inclined?---------------
Wheel boxes protected from dirt?---------------
Easily oiled? ----------------------------------
Removable hub bearings?-----------------------

Levers.

How many hand levers?------------------------
How many foot levers?-------------------------
Purpose of each?------------------------------
Does spring aid in lifting plow?----------------
Can plow be set to float?-----------------------
Plow bottom will clear ground?-------------inches

Management of Plow.

Tongue or tongueless?
How is plow guided?---------------------------
Plow make as good corner to right as to left?------

Miscellaneous.

Weed hooks? ----------------------------------
Kind of coulters attached?----------------------
What adjustments are necessary to attach plow bottoms of different widths?------------------

SULKY AND GANG MOLDBOARD PLOWS.

General Information. **Exercise No. 5.**

Trade name and number?____________________

Manufacturer? ______________________________

Address? _________________________________

How many bottoms?___________________________

Size of bottoms?__________________inches

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is moldboard polished?______________

Is shin reinforced?__________________________

Share.

Point reinforced? __________________________

Bearing at wing?___________________________inch

How many bolts hold share on?________________

Amount of vertical suction?_______________inch

Amount of horizontal suction?_____________inch

How can suction be varied?___________________

Landside.

With or without landside?
Length?___________________inches
High, medium or low?

Frog.

Material—steel, cast iron or malleable?

Is it large or small?__________________________

Beam.

Frame or beam hitch?

Height of hitch? (plow bottom on floor)_____inches

Clevis well made?____________________________

Frame. (Answer for frame plow).

Is frame strong and rigid enough to withstand the strains of plowing?_________________________

How many bails?_________________________________

Are bearings of ample size?____________________

Can they be easily removed?____________________

How are the wheels attached to the frame?________

Is the plow self leveling?______________________

Wheels.

Wheels substantially attached to beam?___________

Rear furrow wheel set over from landside?___inches

Can this be adjusted?_____________________________

All wheels adjustable?________________________

Has rear wheel locking device?__________________

Why are furrow wheels inclined?_________________

Wheel boxes protected from dirt?________________

Easily oiled? _____________________________________

Removable hub bearings?________________________

Levers.

How many hand levers?__________________________

How many foot levers?___________________________

Purpose of each?_________________________________

Does spring aid in lifting plow?__________________

Can plow be set to float?________________________

Plow bottom will clear ground?______________inches

Management of Plow.

Tongue or tongueless?

How is plow guided?______________________________

Plow make as good corner to right as to left?______

Miscellaneous.

Weed hooks? ______________________________________

Kind of coulters attached?_______________________

What adjustments are necessary to attach plow bottoms of different widths?____________________

SULKY AND GANG MOLDBOARD PLOWS.

General Information. **Exercise No. 5.**

Trade name and number?----------------------

Manufacturer? ------------------------------

Address? --

How many bottoms?----------------------------

Size of bottoms?-------------------inches

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is moldboard polished?--------------

Is shin reinforced?-----------------------------

Share.

Point reinforced? ------------------------------

Bearing at wing?---------------------------inch

How many bolts hold share on?-----------------

Amount of vertical suction?---------------inch

Amount of horizontal suction?-------------inch

How can suction be varied?------------------

Landside.

With or without landside?

Length?---------------------inches

High, medium or low?

Frog.

Material—steel, cast iron or malleable?

Is it large or small?---------------------------

Beam.

Frame or beam hitch?

Height of hitch? (plow bottom on floor)-----inches

Clevis well made?----------------------------

Frame. (Answer for frame plow).

Is frame strong and rigid enough to withstand the strains of plowing?__________________________
How many bails?_________________________________
Are bearings of ample size?_________________________
Can they be easily removed?_______________________
How are the wheels attached to the frame?_________
Is the plow self leveling?__________________________

Wheels.

Wheels substantially attached to beam?____________
Rear furrow wheel set over from landside?___inches
Can this be adjusted?______________________________
All wheels adjustable?_____________________________
Has rear wheel locking device?_____________________
Why are furrow wheels inclined?___________________
Wheel boxes protected from dirt?__________________
Easily oiled? _______________________________________

Levers.

How many hand levers?____________________________
How many foot levers?_____________________________
Purpose of each?__________________________________
Does spring aid in lifting plow?____________________
Can plow be set to float?___________________________
Plow bottom will clear ground?_______________inches

Management of Plow.

Tongue or tongueless?
How is plow guided?________________________________
Plow make as good corner to right as to left?_______

Miscellaneous.

Weed hooks? ______________________________________
Kind of coulters attached?__________________________
What adjustments are necessary to attach plow bottoms of different widths?______________________
Which of plows studied do you prefer?_____________

DISC PLOWS.

General Information. **Exercise No. 6.**

Trade name and number?--------------------
Manufacturer? --------------------
Address? --------------------

Discs.

Diameter?--------------------inches
How many?--------------------
How many bolts attach disc to casting?----------
Disc bearing dust proof?--------------------
Kind of bearing—plain, ball or roller?
How is bearing lubricated?------------------
Discs easily removed for sharpening?------------
Scraper clean disc from center to edge?----------
Angle of disc adjustable?--------------------
May number of discs be increased or decreased?----

Wheels.

How do wheels of this plow differ from those of other plows? --------------------
Which wheels are inclined?--------------------
Why are they inclined?--------------------
Wheel boxes protected from dirt?---------------
How are wheels greased?--------------------
Can rear furrow wheel be locked?--------------
Will rear furrow wheel castor in any direction?----
Can rear furrow wheel be adjusted?-------------
How is set of front furrow wheel controlled?------
Which wheels are or can be weighted?----------
How can the rear furrow wheel be set to offset the pressure on disc?--------------------

Levers.

How many hand levers?--------------------
How many foot levers?--------------------
Purpose of each?--------------------
Are levers convenient to operator?-------------
Disc will clear ground?---------------inches.
How deep will disc plow?-------------inches.
Distance frame clears floor with disc on floor?----
-----------inches

Management of Plow.

Reversible or non-reversible disc?
If reversible, how is it reversed?---------------
How can width of cut be changed?--------------

DISC PLOWS.

General Information. **Exercise No. 6.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? ___________________________________

Discs.

Diameter?_________________________inches

How many?_______________________

How many bolts attach disc to casting?___________

Disc bearing dust proof?______________________

Kind of bearing—plain, ball or roller?

How is bearing lubricated?____________________

Discs easily removed for sharpening?_____________

Scraper clean disc from center to edge?___________

Angle of disc adjustable?______________________

May number of discs be increased or decreased?____

Wheels.

How do wheels of this plow differ from those of other plows? __________________________________

Which wheels are inclined?____________________

Why are they inclined?_______________________

Wheel boxes protected from dirt?_______________

How are wheels greased?______________________

Can rear furrow wheel be locked?______________

Will rear furrow wheel castor in any direction?____

Can rear furrow wheel be adjusted?______________

How is set of front furrow wheel controlled?______

Which wheels are or can be weighted?___________

How can the rear furrow wheel be set to offset the pressure on disc?_________________________

Levers.

How many hand levers?________________________

How many foot levers?________________________

Purpose of each?_____________________________

Are levers convenient to operator?______________

Disc will clear ground?________________inches.

How deep will disc plow?______________inches.

Distance frame clears floor with disc on floor?____ ___________inches

Management of Plow.

Reversible or non-reversible disc?

If reversible, how is it reversed?_______________

How can width of cut be changed?______________

Miscellaneous.

Which of the plows studied do you prefer?________

ENGINE GANG MOLDBOARD PLOWS.

General Information. **Exercise No. 7.**

Trade name and number?------------------------

Manufacturer? ---------------------------------

Address? --------------------------------------

How many bottoms?-----------------------------

Size of bottoms?--------------------inches.

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is moldboard polished?---------------

Is shin reinforced?-----------------------------

Share.

Point reinforced? ------------------------------

Bearing at wing?---------------inch.

How many bolts hold share on?------------------

Amount of vertical suction?---------------inch.

Amount of horizontal suction?--------------inch.

How can suction be varied?---------------------

Landside.

Which bottoms have landsides?------------------

Length?---------------------inches.

High, medium or low?

Heel reinforced? ------------------------------

Reinforcement removable? ----------------------

Frog.

Material—steel, cast iron or malleable?

Is it large or small?-------------------------

Hitch.

Frame or beam hitch?

Can hitch be adjusted vertically and horizontally?

Hitch have break pin or some other such device?----

Wheels.

All wheels open?--------------------------------

Which wheels have traction lugs?-----------------

Wheel boxes protected from dirt?----------------

How lubricated?------------------------------------

How many gauge wheels?-----------------------

Power Lift.

Investigate lifting clutch and be prepared to explain.

Which wheels furnish power for lifting?----------

Springs aid in lifting?----------------------------

How high does plow share clear ground when lifted?

-------------------------inches.

Levers.

How many? ------------------------------------

Purpose of each lever?---------------------------

How many plow bottoms operated by one lever?----

Can operator reach depth adjusting lever from seat of tractor? ----------------------------------

Is position of levers satisfactory for orchard conditions? --

Miscellaneous.

Kind of coulters used?---------------------------

Any weed hooks?-------------------------------

Can plow be backed up?-------------------------

ENGINE GANG MOLDBOARD PLOWS.

General Information. **Exercise No. 7.**

Trade name and number?----------------------

Manufacturer? ------------------------------

How many bottoms?---------------------------

Size of bottoms?------------------inches.

Moldboard.

Material—steel, soft centered steel, chilled cast iron?

Solid, slat or rod?

Type—stubble, sod or general purpose?

Which way is moldboard polished?---------------

Is shin reinforced?---------------------------

Share.

Point reinforced? ---------------------------

Bearing at wing?---------------inch.

How many bolts hold share on?-----------------

Amount of vertical suction?---------------inch.

Amount of horizontal suction?--------------inch.

How can suction be varied?--------------------

Landside.

Which bottoms have landsides?-----------------

Length?-----------------------inches.

High, medium or low?

Heel reinforced? -----------------------------

Reinforcement removable? ---------------------

Frog.

Material—steel, cast iron or malleable?

Is it large or small?--------------------------

Hitch.

Frame or beam hitch?

Can hitch be adjusted vertically and horizontally?

Hitch have break pin or some other such device?----

Wheels.

All wheels open?------------------------------

Which wheels have traction lugs?-----------

Wheel boxes protected from dirt?---------------

How lubricated?-------------------------------

How many gauge wheels?----------------------

Power Lift.

Investigate lifting clutch and be prepared to explain.

Which wheels furnish power for lifting?-----------

Springs aid in lifting?-------------------------.----

How high does plow share clear ground when lifted?

------------------------inches.

Levers.

How many? ----------------------------------

Purpose of each lever?------------------------

How many plow bottoms operated by one lever?----

Can operator reach depth adjusting lever from seat of tractor? ---------------------------------

Is position of levers satisfactory for orchard conditions? -----------------------------------

Miscellaneous.

Kind of coulters used?-------------------------

Any weed hooks?------------------------------

Can plow be backed up?------------------------

ENGINE GANG DISC PLOW.

General Information. **Exercise No. 8.**

Trade name and number?________________________

Manufacturer? ______________________________

Address? __________________________________

Discs.

How many? _______________________________

Diameter?_________________ inches.

How many bolts attach disc to casting?___________

Kind of bearing—plain, ball or roller?

Disc bearing dust proof?______________________

Disc easily removed for sharpening?_____________

Scraper clean disc from center to edge?__________

Scrapers adjustable?________________

Can angle of disc be changed?__________________

Wheels.

How many? _______________________________

Diameter of each? ___________________________

Shape of rim? ______________________________

Which are inclined?__________________________

Wheel boxes protected from dirt?_______________

Easily lubricated? ___________________________

Can extra weights be attached?_________________

Levers.

How many hand levers?________________________

Purpose of each?____________________________

Disc will clear ground?_____________inches.

How deep will disc plow?___________inches.

Is position of levers satisfactory for orchard conditions? ______________________________

Hitch.

Height of hitch?_________________inches.

Can hitch be adjusted vertically and horizontally?___

Hitch have break pin or some other such device?____

Power Lift.

Investigate lifting clutch and be prepared to explain.

Which wheels furnish power for lifting?__________

These wheels have lugs?_______________________

Springs aid in lifting?_________________________

ENGINE GANG DISC PLOW.

General Information. **Exercise No. 8.**

Trade name and number?----------------------

Manufacturer? ---------------------------------

Address? ------------------------------------

Discs.

How many? -----------------------------------

Diameter?------------------ inches.

How many bolts attach disc to casting?------------

Disc bearing dust proof?-----------------------

Kind of bearing—plain, ball or roller?

Disc easily removed for sharpening?--------------

Scraper clean disc from center to edge?-----------

Scrapers adjustable?-----------------

Can angle of disc be changed?------------------

Wheels.

How many? -----------------------------------

Diameter of each? ---------------------------

Shape of rim? ------------------------------

Which are inclined?----------------------------

Wheel boxes protected from dirt?----------------

Easily lubricated? --------------------------

Can extra weights be attached?------------------

Levers.

How many hand levers?-------------------------

Purpose of each?------------------------------

Disc will clear ground?--------------inches.

How deep will disc plow?------------inches.

Is position of levers satisfactory for orchard conditions? ---------------------------

Hitch.

Height of hitch?------------------inches.

Can hitch be adjusted vertically and horizontally?---

Hitch have break pin or some other such device?----

Power Lift.

Investigate lifting clutch and be prepared to explain.

Which wheels furnish power for lifting?----------

These wheels have lugs?------------------------

Springs aid in lifting?--------------------------

Miscellaneous.

Which of the plows studied do you prefer?--------

COULTERS AND JOINTERS.

Rolling Coulter. **Exercise No. 9.**

Manufacturer? ---------------------------------

Address? ---------------------------------------

Diameter?------------------ inches.

Adjust rolling coulter to assigned plow for plowing 4 inches deep in stubble.
Same for plowing in stumpy land.
Instructor will check adjustment.
Note below how adjustments were made.

Knife Coulter.

Manufacturer? ---------------------------------

Address? ---------------------------------------

Length of blade?------------------------------

Adjustment for same conditions as for rolling coulter.

Note below how adjustments were made.

COULTERS AND JOINTERS.

Fin Coulter. **Exercise No. 9.**

Manufacturer? ________________________________

Address? ____________________________________

To what part of plow is coulter attached? __________

Jointer.

Manufacturer? ________________________________

Address? ____________________________________

Adjust jointer on assigned plow for plowing 6 inches deep.
Instructor will check adjustment.
Note below how adjustment was made.

Combined Rolling Coulter and Jointer.

Manufacturer? ________________________________

Address? ____________________________________

Adjust for same conditions as did for jointer.

Note below how adjustment was made.

SPIKE TOOTH HARROW.

General Information. **Exercise No. 10**

Trade name and number?______________________

Manufacturer? ________________________________

Address? ____________________________________

How many sections? ___________________________

Teeth.

Length?______________________inches.

Diameter?_____________________inch.

Shape—square, diamond, oval or round?

Can teeth be turned around when worn?__________

Have teeth heads?______________________________

Why are some teeth longer than others and have curved tops? ____________________________

How are teeth fastened to frame?_______________

Distance between teeth on bars?____________inches.

How many teeth per width of cut?______________

Fixed or adjustable?__________________________

Frame.

Flexible or rigid?

Will harrow adjust itself to uneven ground?_______

Material—wood or steel?

Frame well made and braced?__________________

How many bars?______________________________

Distance between bars?_____________inches.

Guards on ends of bars to protect against obstructions? ____________________________________

Connection to eveners—cast, malleable or forging?

Connections easily removed?__________________

Frame strong enough to withstand twisting strains? ______________________________

Levers.

How many per section?______________________

Purpose of each?____________________________

Does tilting lever have spring?________________

What is purpose of spring?___________________

Range of adjustment for teeth with tilting lever? ______________________________

Can harrow be raised off the teeth for transporting? ________________________________

Miscellaneous.

Can riding attachment be obtained for this harrow? __________________________

SPIKE TOOTH HARROW.

General Information. **Exercise No. 10**

Trade name and number?------------------------

Manufacturer? --------------------------------

Address? ------------------------------------

How many sections? ---------------------------

Teeth.

Length?------------------------inches.

Diameter?------------------------inch.

Shape—square, diamond, oval or round?

Can teeth be turned around when worn?----------

Have teeth heads?------------------------------

Why are some teeth longer than others and have curved tops? ------------------------------

How are teeth fastened to frame?---------------

Distance between teeth on bars?------------inches.

How many teeth per width of cut?----------------

Fixed or adjustable?---------------------------

Frame.

Flexible or rigid?

Will harrow adjust itself to uneven ground?-------

Material—wood or steel?

Frame well made and braced?-------------------

How many bars?--------------------------------

Distance between bars?--------------inches.

Guards on ends of bars to protect against obstructions? ---------------------------------------

Connection to eveners—cast, malleable or forging?

Connections easily removed?--------------------

Frame strong enough to withstand twisting strains?

Levers.

How many per section?------------------------

Purpose of each?-------------------------------

Does tilting lever have spring?------------------

What is purpose of spring?---------------------

Range of adjustment for teeth with tilting lever?

Can harrow be raised off the teeth for transporting? -----------------------------------

Miscellaneous.

Can riding attachment be obtained for this harrow?

Which one of the harrows studied do you prefer?

STALK CUTTERS.

General Information. **Exercise No. 11.**

Trade name and number?_________________________

Manufacturer? ___________________________________

Address? ______________________________________

Single or double?

Cutter Head.

How many knives?______________________________

Knives—straight or curved?

Knives—single or double edged?

Into what length will stalks be cut?_________inches

Material in spiders—cast or malleable?

Diameter of cutter head?_____________inches.

Does shaft go clear through cutter head?_________

Is provision made to keep center of cutter head clear of stalks? _________________________________

Bearings protected from dirt?_____________________

Bearings lubricated by grease or oil?_____________

Bearings self aligning?__________________________

Will blades shear their bolts easily?______________

Frame.

Strong and well braced?________________________

Spring hitch? ___________________________________

Hitch adjustable? ________________________________

Levers.

How many? ______________________________________

Purpose of each?________________________________

How high can cutter be made to clear ground?____ ________________________inches.

Wheels.

Diameter?____________________inches.

Width tire?____________________inches.

Material—steel or cast iron?

Boxes protected from dirt?______________________

How lubricated? _________________________________

Miscellaneous.

Stalk hooks—how controlled?____________________

Kind of seat spring?_____________________________

Cutter convertible into cultivator? ________________

STALK CUTTERS.

General Information. **Exercise No. 11.**

Trade name and number?________________________

Manufacturer? ________________________________

Address? ______________________________________

Single or double?

Cutter Head.

How many knives?_______________________________

Knives—straight or curved?
Knives—single or double edged?

Into what length will stalks be cut?_________inches
Material in spiders—cast or malleable?

Diameter of cutter head?_____________inches.

Does shaft go clear through cutter head?_________

Is provision made to keep center of cutter head clear of stalks? __________________________________

Bearings protected from dirt?____________________

Bearings lubricated by grease or oil?_____________

Bearings self aligning?___________________________

Will blades shear their bolts easily?______________

Frame.

Strong and well braced?_________________________

Spring hitch? ___________________________________

Hitch adjustable? ________________________________

Levers.

How many? _______________________________________

Purpose of each?_________________________________

How high can cutter be made to clear ground?____ ________________________inches.

Wheels.

Width tire?___________________inches.

Diameter?___________________inches.

Material—steel or cast iron?

Boxes protected from dirt?_____________________

How lubricated? __________________________________

Miscellaneous.

Stalk hooks—how controlled?___________________

Kind of seat spring?_____________________________

Cutter convertible into cultivator? ________________

Which of the stalk cutters do you prefer?_________

DISC HARROW.

General Information. **Exercise No. 12.**

Trade name and number?----------------------
Manufacturer? --------------------------------
Address? ---------------------------------------
Total cutting width?----------ft.----------inches.

Disc.

Diameter?---------------------inches.
How many? --
Kind—full, cutaway or spading?
Distance between discs?--------------inches.
Cone shaped raised part in center of disc?---------
Amount of dish?-----------------inch.
Which way does disc face: out or in?

Bearings.

How many? --
Material—cast or malleable?
Bushings—wood, chilled iron or roller?
Thrust bearings? ----------------------------
Bearings easily lubricated?-----------------------
Oil or grease used?----------------------------
Bumpers used? ----------------------------------

Scrapers.

Oscillating or stationary?
Can they be shifted to any part of disc?-----------
Can they be locked off or on discs?---------------

Levers.

How many hand?-----------------------------
How many foot?------------------------------
Purpose of each?-----------------------------
Easy to operate from seat?----------------------
Size of angle that gangs make with tongue when they are in extreme position?--------------------

Gangs.

Gangs reversible? ------------------------------
Can gangs be separated? ----------------------
How far apart?----------------inches.
Can gangs be adjusted for ridges?----------------
Gang bolt—round or square?--------------------
Gang bolt—diameter?------------inch.
Gang bolt locked in place?-----------------------

Frame.

Type of steel bar used?---------------------------
Riveted or bolted together?
Well trussed and braced?------------------------
Can rear gang be attached to the frame?-----------
How many standards?-------------------------
Amount of clearance between discs and standards?

Hitch.

Stub or full tongue?
Tongue truck? --------------------------------
Can heighth of hitch be adjusted?---------------

Miscellaneous.

Weight pans? --------------------------------
Method of transporting? ------------------------

DISC HARROW.

General Information. **Exercise No. 12.**

Trade name and number? ----------------------

Manufacturer? ----------------------------------

Address? --

Total cutting width? ---------ft. ----------inches.

Disc.

Diameter? --------------------inches.

How many? ---------------------------------------

Kind—full, cutaway or spading?

Distance between discs? --------------inches.

Cone shaped raised part in center of disc? ---------

Amount of dish? ----------------inch.

Which way does disc face: out or in?

Bearings.

How many? ---------------------------------------

Material—cast or malleable?

Bushings—wood, chilled iron or roller?

Thrust bearings? --------------------------------

Bearings easily lubricated? ----------------------

Oil or grease used? -----------------------------

Bumpers used? ----------------------------------

Scrapers.

Oscillating or stationary?

Can they be shifted to any part of disc? -----------

Can they be locked off or on discs? ---------------

Levers.

How many hand? ---------------------------------

How many foot? ---------------------------------

Purpose of each? --------------------------------

Easy to operate from seat? -----------------------

Size of angle that gangs make with tongue when they are in extreme position? ---------------------

Gangs.

Gangs reversible? -------------------------------

Can gangs be separated? -------------------------

How far apart? ---------------inches.

Can gangs be adjusted for ridges? ----------------

Gang bolt—round or square? ---------------------

Gang bolt—diameter? ------------inch.

Gang bolt locked in place? -----------------------

Frame.

Type of steel bar used? --------------------------

Riveted or bolted together?

Well trussed and braced? -------------------------

Can rear gang be attached to the frame? ----------

How many standards? ----------------------------

Amount of clearance between discs and standards? --------------------------------

Hitch.

Stub or full tongue?

Tongue truck? ----------------------------------

Can heighth of hitch be adjusted? ----------------

Miscellaneous.

Weight pans? -----------------------------------

Method of transporting? --------------------------

DISC HARROW.

General Information. **Exercise No. 12.**

Trade name and number?----------------------
Manufacturer? -----------------------------
Address? ---------------------------------
Total cutting width?---------ft.----------inches.

Disc.

Diameter?--------------------inches.
How many? -------------------------------
Kind—full, cutaway or spading?
Distance between discs?--------------inches.
Cone shaped raised part in center of disc?---------
Amount of dish?----------------inch.
Which way does disc face: out or in?

Bearings.

How many? ---------------------------------
Material—cast or malleable?
Bushings—wood, chilled iron or roller?
Thrust bearings? --------------------------
Bearings easily lubricated?----------------------
Oil or grease used?---------------------------
Bumpers used? -----------------------------

Scrapers.

Oscillating or stationary?
Can they be shifted to any part of disc?-----------
Can they be locked off or on discs?--------------

Levers.

How many hand?---------------------------
How many foot?----------------------------
Purpose of each?---------------------------
Easy to operate from seat?---------------------
Size of angle that gangs make with tongue when they are in extreme position?--------------------

Gangs.

Gangs reversible? --------------------------
Can gangs be separated? --------------------
How far apart?----------------inches.
Can gangs be adjusted for ridges?----------------
Gang bolt—round or square?-------------------
Gang bolt—diameter?------------inch.
Gang bolt locked in place?-----------------------

Frame.

Type of steel bar used?-------------------------
Riveted or bolted together?
Well trussed and braced?-----------------------
Can rear gang be attached to the frame?----------
How many standards?-------------------------
Amount of clearance between discs and standards? --------------------------------

Hitch.

Stub or full tongue?
Tongue truck? -----------------------------
Can heighth of hitch be adjusted?-----------------

Miscellaneous.

Weight pans? -------------------------------
Method of transporting? -------------------------
Which of the harrows studied do you prefer?------

DOUBLE ACTING DISC HARROW.

General Information. **Exercise No. 13.**

Trade name and number?--------------------
Manufacturer? ----------------------------
Address? ---------------------------------
Total cutting width?---------feet---------inches

Disc.

How many in each gang?--------------------
How many gangs?---------------------------
Kind—on front gangs, full or cutaway?
Kind—on rear gangs, full or cutaway?
Diameter?------------------inches.
Distance between dics?-- -------inches
Amount of dish?--------------inches.
Cone shaped raised part in center of disc?--------
Front gangs disc face in or out?
Rear gangs disc face in or out?

Bearings.

How many? --------------------------------
Material—cast or malleable?-------------------
Bushings—wood, chilled iron or roller?
Bearings easily lubricated?--------------------
Thrust bearings? ---------------------------
Oil or grease used?--------------------------
Bumpers used? -----------------------------

Scrapers.

Oscillating or stationary?
Can they be shifted to any part of the discs?-------
Can they be locked off or on dics?---------------

Gangs.

Gangs reversible? ---------------------------
Can gangs be adjusted for ridges?--------------
Gang bolt diameter?-------------inch.
Gang bolt locked in place?---------------------

Levers.

How many hand?-----------------------------
How many foot?------------------------------
Purpose of each?----------------------------
Easy to operate from seat?---------------------
Power angling device?------------------------

Frame.

Type of steel bar used?-----------------------
Riveted or bolted together?
Well trussed and braced?----------------------
How many standards?-------------------------
Amount of clearance between discs and standards?
-------------------------inches.
Examine flexibility of frame for turning.
How is rear section connected to front?-----------
Can it be easily disconnected?------------------

Hitch.

Tractor or team?
Stub or full tongue?
Tongue truck? -----------------------------
Can height of hitch be adjusted?-----------------

Miscellaneous.

Weight pans? -------------------------------
Method of transporting? -----------------------
Can harrow be used for horses as well as tractor?

DOUBLE ACTING DISC HARROW.

General Information. **Exercise No. 13.**

Trade name and number?____________________
Manufacturer? ____________________
Address? ____________________
Total cutting width?_________feet_________inches

Disc.

How many in each gang?____________________
How many gangs?____________________
Kind—on front gangs, full or cutaway?
Kind—on rear gangs, full or cutaway?
Diameter?__________________inches.
Distance between dics?__ _______inches
Amount of dish?______________inches.
Cone shaped raised part in center of disc?________
Front gangs disc face in or out?
Rear gangs disc face in or out?

Bearings.

How many? ____________________
Material—cast or malleable?____________________
Bushings—wood, chilled iron or roller?
Bearings easily lubricated?____________________
Thrust bearings? ____________________
Oil or grease used?____________________
Bumpers used? ____________________

Scrapers.

Oscillating or stationary?
Can they be shifted to any part of the discs?_______
Can they be locked off or on dics?_______________

Gangs.

Gangs reversible? ____________________
Can gangs be adjusted for ridges?______________
Gang bolt diameter?_____________inch.
Gang bolt locked in place?____________________

Levers.

How many hand?____________________
How many foot?____________________
Purpose of each?____________________
Easy to operate from seat?____________________
Power angling device?____________________

Frame.

Type of steel bar used?____________________
Riveted or bolted together?
Well trussed and braced?____________________
How many standards?____________________
Amount of clearance between discs and standards?
_________________________inches.
Examine flexibility of frame for turning.
How is rear section connected to front?___________
Can it be easily disconnected?__________________

Hitch.

Tractor or team?
Stub or full tongue?
Tongue truck? ____________________
Can height of hitch be adjusted?________________

Miscellaneous.

Weight pans? ____________________
Method of transporting? ____________________
Can harrow be used for horses as well as tractor?
____
Which of the harrows studied do you prefer?________

LAND ROLLERS AND PULVERIZERS.

General Information. **Exercise No. 14.**

Trade name and number?-----------------------

Manufacturer? --------------------------------

Address? -----------------------------------

Width?--------------feet.

Weight?--------------

Rollers.

Diameter?------------inches.

Width?---------------inches.

How many? ----------------------------------

Shape rollers rim surface?----------------------

All rollers alike?-----------------------------

How many rollers to a gang?--------------------

How many gangs of rollers?---------------------

Will rollers adapt themselves to uneven ground?----

Frame.

Material—wood or steel?

Corners reinforced? ---------------------------

Standards—cast iron or steel?

Bearings—cast iron, wood or roller?

Easily lubricated? ----------------------------

Bearings constructed to exclude dirt?-------------

Diameter of axle?-------------inches.

Miscellaneous.

Will this roller leave a mulch or smooth surface?

Does roller compact surface or sub-soil?----------

LAND ROLLERS AND PULVERIZERS.

General Information. **Exercise No. 14.**

Trade name and number?______________________

Manufacturer? ________________________________

Address? ____________________________________

Width?______________feet.

Weight?______________

Rollers.

Diameter?____________inches.

Width?________________inches.

How many? ___________________________________

Shape rollers rim surface?______________________

All rollers alike?_________________________________

How many rollers to a gang?____________________

How many gangs of rollers?____________________

Will rollers adapt themselves to uneven ground?____

____

Frame.

Material—wood or steel?

Corners reinforced? __________________________

Standards—cast iron or steel?

Bearings—cast iron, wood or roller?

Easily lubricated? ____________________________

Bearings constructed to exclude dirt?_____________

Diameter of axle?_____________inches.

Miscellaneous.

Will this roller leave a mulch or smooth surface?

____

Does roller compact surface or sub-soil?__________

Which of the rollers studied do you prefer?________

ONE ROW WALKING CORN PLANTER.

General Information. **Exercise No. 15.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? __________________________________

Seed Box.

How many? _________________________________

Kinds of seed can be sown?____________________

Can two kinds of seed be sown at once?___________

What kinds? ________________________________

Corn plates—edge selection or round hole?

Cotton seed sown in bunches or separately?________

Is box hinged?_______________________________

How is distance between seed varied?____________

How is seed plate driven?______________________

Furrow opener.

Kind—stub, curved shoe or hoe?

How many valves in planter shank?______________

Depth gauge? _______________________________

Can corn and soy beans be planted at the same time at different depths? ___________________________

How many covering shovels?____________________

What kind covering shovels?____________________

Frame.

Well made and braced?_________________________

Handles adjustable?___________________________

Wheels.

Diameter press wheel?___________inches.

Does press wheel generate power?________________

How is planter thrown in and out of gear?_________

Is there a front wheel?_________________________

Levers.

How many? _________________________________

Purpose of each? _____________________________

Is the lever for throwing in and out of gear handy?

____

Miscellaneous.

Do the plates revolve when planter is in gear and backed? ____________________________________

Fertilizer attachment? __________________________

ONE ROW WALKING CORN PLANTER.

Exercise No. 15.

General Information.

Trade name and number?-----------------------

Manufacturer? -----------------------------

Address? ---------------------------------

Seed Box.

How many? --------------------------------

Kinds of seed can be sown?--------------------

Can two kinds of seed be sown at once?-----------

What kinds? -------------------------------

Corn plates—edge selection or round hole?

Cotton seed sown in bunches or separately?--------

Is box hinged?-----------------------------

How is distance between seed varied?------------

How is seed plate driven?----------------------

Furrow opener.

Kind—stub, curved shoe or hoe?

How many valves in planter shank?--------------

Depth gauge? ------------------------------

Can corn and soy beans be planted at the same time at different depths? ----------------------

How many covering shovels?---------------------

What kind covering shovels?--------------------

Frame.

Well made and braced?------------------------

Handles adjustable?---------------------------

Wheels.

Diameter press wheel?-----------inches.

Does press wheel generate power?----------------

How is planter thrown in and out of gear?---------

Is there a front wheel?-----------------------

Levers.

How many? --------------------------------

Purpose of each? ---------------------------

Is the lever for throwing in and out of gear handy?

Miscellaneous.

Do the plates revolve when planter is in gear and backed? ----------------------------------

Fertilizer attachment? -----------------------

ONE ROW WALKING CORN PLANTER.

General Information. **Exercise No. 15.**

Trade name and number?______________________

Manufacturer? ________________________________

Adress? ___________________________________

Seed Box.

How many? _________________________________

Kinds of seed can be sown?__________________

Can two kinds of seed be sown at once?___________

What kinds? _______________________________

Corn plates—edge selection or round hole?

Cotton seed sown in bunches or separately?________

Is box hinged?_______________________________

How is distance between seed varied?____________

How is seed plate driven?______________________

Furrow opener.

Kind—stub, curved shoe or hoe?

How many valves in planter shank?______________

Depth gauge? _______________________________

Can corn and soy beans be planted at the same time at different depths? _____________________

How many covering shovels?____________________

What kind covering shovels?____________________

Frame.

Well made and braced?________________________

Handles adjustable?___________________________

Wheels.

Diameter press wheel?___________inches.

Does press wheel generate power?_______________

How is planter thrown in and out of gear?_________

Is there a front wheel?_________________________

Levers.

How many? _________________________________

Purpose of each? ____________________________

Is the lever for throwing in and out of gear handy?

____

Miscellaneous.

Do the plates revolve when planter is in gear and backed? _____________________________

Fertilizer attachment? __________________________

Which of planters studied do you prefer?_________

ONE ROW RIDING CORN PLANTER.

Exercise No. 16.

General Information.

Trade name and number?------------------------

Manufacturer? ---------------------------------

Address? -------------------------------------

Seed Box.

How many? ----------------------------------

Kinds of seed can be sown?---------------------

Can two kinds of seed be sown at once?-----------

What kinds? ----------------------------------

Corn plates—edge selection or round hole?

Cotton seed sown in bunches or separately?

Is box hinged? --------------------------------

How is distance between seed varied?------------

How is seed plate driven?-----------------------

Furrow Opener.

Kind—stub, curved shoe, hoe or sweep?

If sweep—what kind and size?------------------

How many valves in planter shank?-------------

Can corn and soy beans be planted at the same time, at different depths?----------------------

How many covering shovels?-------------------

What kind of covering shovels?------------------

Wheels.

Diameter?---------------------feet.

Width of tire?----------------inches.

Tires—flat or curved?

Cleaners? -----------------------------------

Adjustable for different widths of track? Maximum --------------ft. Minimum-------------ft.

One or both wheels supply power for planter operation? ----------------------------------

Levers.

How many hand levers?------------------------

How many foot levers?-------------------------

Purpose of each?-----------------------------

Micellaneous.

Fertilizer attachment? ------------------------

Investigate how clutch works?------------------

ONE ROW RIDING CORN PLANTER.

General Information. **Exercise No. 16.**

Trade name and number?________________________
Manufacturer? __________________________________
Address? ______________________________________

Seed Box.

How many? _____________________________________
Kinds of seed can be sown?_______________________
Can two kinds of seed be sown at once?____________
Corn plates—edge selection or round hole?
Cotton seed sown in bunches or separately?
What kinds? ____________________________________
Is box hinged? __________________________________
How is distance between seed varied?_____________
How is seed plate driven?__________________________

Furrow Opener.

Kind—stub, curved shoe, hoe or sweep?
If sweep—what kind and size?____________________
How many valves in planter shank?______________
Can corn and soy beans be planted at the same time, at different depths?__________________________
How many covering shovels?______________________
What kind of covering shovels?____________________

Wheels.

Diameter?________________________feet.
Width of tire?___________________inches.
Tires—flat or curved?
Cleaners? ____
Adjustable for different widths of track? Maximum ______________ft. Minimum______________ft.
One or both wheels supply power for planter operation? ____________________________________

Levers.

How many hand levers?___________________________
How many foot levers?____________________________
Purpose of each?__________________________________

Micellaneous.

Fertilizer attachment? ____________________________
Investigate how clutch works?______________________
Which of planters studied do you prefer?___________

TWO ROW CORN PLANTERS.

General Information. **Exercise No. 17.**

Trade name and number?------------------------

Manufacturer? ---------------------------------

Address? -------------------------------------

Seed Box.

How many? -----------------------------------

Kinds of seed sown?----------------------------

Can two kinds of seed be sown at once?----------

What kinds? ----------------------------------

Corn plates—edge selection or round hole?

Cotton seed sown in bunches or separately?

Are boxes hinged? -----------------------------

Can plates be changed without emptying seed box?

Seed—drilled, checked or both?

How is change made from one to the other?--------

Checked corn drop—cumulative or full hill?

Checked corn drop—continuous or intermittent?

How are seed plates driven?--------------------

How many speeds can plates be driven?-----------

Can number of kernels dropped be changed without changing plates? -------------------------

Furrow Opener.

Kind—stub, curved shoe, single or double disc?

Number of valves in planter shank?--------------

Can corn and soy beans be planted at same time at different depths? -------------------------

What effect does a short neck strap have on uniformity and depth of planting?------------------

Maximum depth seed can be planted?-------inches.

Levers.

How many hand levers?________________________

How many foot levers?________________________

Purpose of each?______________________________

Checking Attachment.

Vertical or horizontal checking bar?

How is reel attached and driven?________________

Can wire be released from the seat?______________

How far apart are the buttons on the wire?______ft. ______inches.

Can seed be dropped in hills without use of wire? ____

Can last two rows be sown and wire reeled up at the same time? _________________________________

Frame.

Maximum width of rows?____________feet.

Minimum width of rows?____________feet.

Frame well made and braced?__________________

Wheels.

Diameter?__________feet__________inches.

Width?___________feet___________inches.

Kind—open, solid, concave, flat or double?

Cleaners? ____________________________________

Easily lubricated? ____________________________

Miscellaneous.

What kind of marker?_________________________

How many? ___________________________________

Can it be easily raised, lowered and changed from one side to other?________________________

Fertilizer attachment? _________________________

Can height of hitch be varied?__________________

Investigate how clutch works.

Is drop shaft operated thru a clutch?____________

Is clutch on drop shaft or axle?________________

TWO ROW CORN PLANTERS.

Exercise No. 17.

General Information.

Trade name and number?------------------------

Manufacturer? ----------------------------------

Address? ---------------------------------------

Seed Box.

How many? -------------------------------------

Kinds of seed sown?----------------------------

Can two kinds of seed be sown at once?----------

What kinds? -----------------------------------

Corn plates—edge selection or round hole?

Cotton seed sown in bunches or separately?

Are boxes hinged? -----------------------------

Can plates be changed without emptying seed box?

Seed—drilled, checked or both?

How is change made from one to the other?--------

Checked corn drop—cumulative or full hill?

Checked corn drop—continuous or intermittent?

How are seed plates driven?--------------------

How many speeds can plates be driven?-----------

Can number of kernels dropped be changed without changing plates? --------------------------

Furrow Opener.

Kind—stub, curved shoe, single or double disc?

Number of valves in planter shank?--------------

Can corn and soy beans be planted at same time at different depths? -------------------------

What effect does a short neck strap have on uniformity and depth of planting?------------------

Maximum depth seed can be planted?--------inches.

Levers.

How many hand levers?________________________

How many foot levers?_________________________

Purpose of each?______________________________

Checking Attachment.

Vertical or horizontal checking bar?

How is reel attached and driven?________________

Can wire be released from the seat?______________

How far apart are the buttons on the wire?______ft.

_______inches.

Can seed be dropped in hills without use of wire?

____

Can last two rows be sown and wire reeled up at the same time? _____________________________

Frame.

Maximum width of rows?____________feet.

Minimum width of rows?____________feet.

Frame well made and braced?__________________

Wheels.

Diameter?__________feet__________inches.

Width?___________feet___________inches.

Kind—open, solid, concave, flat or double?

Cleaners? _________________________________

Easily lubricated? _____________________________

Miscellaneous.

What kind of marker?________________________

How many? _______________________________

Can it be easily raised, lowered and changed from one side to other?_________________________

Fertilizer attachment? _________________________

Can height of hitch be varied?_________________

Investigate how clutch works.

Is drop shaft operated thru a clutch?____________

Is clutch on drop shaft or axle?_________________

Which of planters studied do you prefer?_________

POTATO PLANTER.

General Information. **Exercise No. 18.**

Trade name and number?---------------------

Manufacturer? -------------------------------

Address? ----------------------------------

Seed Box.

Material—canvas, wood or steel?

Capacity -----------------------------bushels.

Seed dropped by knives, elevator or rotary table?

Can operator see seed dropping?---------------

Seed liable to be damaged by dropping device?----

How is distance between seed varied?------------

Can this change be easily and quickly made?------

Agitator in bottom of box?---------------------

Furrow Opener.

Kind? -------------------------------------

How is depth of planting adjusted?--------------

Located directly under axle?-------------------

Furrow Covers.

Kind? -------------------------------------

Adjustable for width, angle and depth?-----------

Bearings easily oiled? ------------------------

Levers.

How many? --------------------------------

Purpose of each?----------------------------

Easily operated from seat?---------------------

Wheels.

Diameter?------------feet------------inches.

Width of tire?---------------inches.

Bearings protected from dirt?-----------------

Easily lubricated? ----------------------------

Power taken from one or both wheels?-----------

Power transmitted by gears or chain?------------

Miscellaneous.

Number of men to operate?--------------------

Fertilizer attachment? ------------------------

Where is fertilizer deposited with reference to the seed? -------------------------------------

What kind of marker?-------------------------

Easily changed from side to side?---------------

Adjustable as to length?-----------------------

POTATO PLANTER.

General Information. **Exercise No. 18.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? ___________________________________

Seed Box.

Material—canvas, wood or steel?

Capacity ____________________________ bushels.

Seed dropped by knives, elevator or rotary table?

Can operator see seed dropping?_______________

Seed liable to be damaged by dropping device?____

How is distance between seed varied?_____________

Can this change be easily and quickly made?______

Agitator in bottom of box?____________________

Furrow Opener.

Kind? ______________________________________

How is depth of planting adjusted?_______________

Located directly under axle?___________________

Furrow Covers.

Kind? ______________________________________

Adjustable for width, angle and depth?___________

Bearings easily oiled? _________________________

Levers.

How many? _________________________________

Purpose of each?_____________________________

Easily operated from seat?_____________________

Wheels.

Diameter?____________feet____________inches.

Width of tire?________________inches.

Bearings protected from dirt?__________________

Easily lubricated? ____________________________

Power taken from one or both wheels?___________

Power transmitted by gears or chain?____________

Miscellaneous.

Number of men to operate?_____________________

Fertilizer attachment? _________________________

Where is fertilizer deposited with reference to the seed? _____________________________________

What kind of marker?_________________________

Easily changed from side to side?_______________

Adjustable as to length?_______________________

Which of the planters studied do you prefer?______

BROADCASTERS.

Wheelbarrow. **Exercise No. 19.**

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Seed box
- depth? ___________________________inches.
- width? ___________________________inches.
- length? ___________feet___________inches.

Capacity of seed box?____________________pecks.

Investigate how power is generated and applied?

How is amount of seed sown adjusted?____________

Kinds of seed can be sown?______________________

Knapsack Seeder.

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Capacity of bag?______________pecks.

Investigate how power is generated and applied?

How is amount of seed sown adjusted?____________

Kinds of seed sown?____________________________

Endgate Seeder.

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Capacity of seed box?_______________pecks..

Investigate how power is generated and applied?

How is amount of seed sown adjusted?___________

Number of scattering fans?_____________________

Force feed? __________________________________

Agitator? ____________________________________

Grass seed attachment?_________________________

Two-Wheel Seeder.

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Seed box
- depth? ___________________________inches.
- width? ___________________________inches.
- length? ___________feet___________inches.

Capacity of seed box?___________pecks.

Investigate how power is generated and applied.

How is amount of seed sown adjusted?___________

Force feed?________________

Agitator? ________________

Grass seed attachment? ________________________

GRAIN DRILLS.

General Information. **Exercise No. 20.**

Trade name and number?------------------------
Manufacturer? --------------------------------
Address? -------------------------------------
Size?-------furrow openers-------distance apart.

Seed Box.

Cubical contents?------------------cubic inches.
Shape of end?---------------------------------
Trussed? -------------------------------------
Metal or wood bottom?-------------------------
Covers—one or two pieces?
Agitator? ------------------------------------
Grass seed attachment? -----------------------
Fertilizer attachment?------------------------
Will all seed go into seed cups when box is about empty? ---------------------------------

Valves.

Seed shaft driven by chain or shaft drive?
Feed regulated by speed of shaft or exposure of seed shell?
Kinds of seed can be sown?--------------------

Seed Tubes.

Material—rubber, wire or spiral spring?

Furrow Opener.

Kind—hoe, shoe, single or double disc?
Staggard or in line?
Can spacing be varied?------------------------
Can suction be varied?------------------------
Are they in front, behind or under main axle?
How are they forced in ground?----------------
Disc bearing easily lubricated?---------------
Disc bearing large enough to cause clogging?
Does disc form one side of boot?--------------
Kind of disc bearing?-------------------------

Frame.

Well braced and balanced?---------------------
Reinforced corners? --------------------------
Single or double draw bars for furrow openers?
Main axle bearings—plain, roller or self aligning?
Are bearings easily oiled?--------------------

Levers.

How many? ------------------------------------
Purpose of each?------------------------------
Does lifting furrow openers throw machine out of gear? ------------------------------------
Power lift? ----------------------------------

Wheels.

Wood or steel?
Diameter?-----------feet-----------inches.
Width?---------------------inches.

Miscellaneous.

Covering chains or press wheels?
Seat or foot board?
Land measure provided?------------------------
Can it be adjusted?---------------------------

GRAIN DRILLS.

General Information. **Exercise No. 20.**

Trade name and number?______________________
Manufacturer? ______________________________
Address? __________________________________
Size?_______furrow openers_______distance apart.

Seed Box.

Cubical contents?__________________cubic inches.
Shape of end?______________________________
Trussed? __________________________________
Metal or wood bottom?______________________
Covers—one or two pieces?
Agitator? _________________________________
Grass seed attachment? _____________________
Fertilizer attachment?_______________________
Will all seed go into seed cups when box is about empty? ________________________________

Valves.

Seed shaft driven by chain or shaft drive?
Feed regulated by speed of shaft or exposure of seed shell?
Kinds of seed can be sown?__________________

Seed Tubes.

Material—rubber, wire or spiral spring?

Furrow Opener.

Kind—hoe, shoe, single or double disc?
Staggard or in line?
Can spacing be varied?_______________________
Can suction be varied?_______________________
Are they in front, behind or under main axle?
How are they forced in ground?________________
Disc bearing easily lubricated?_______________
Disc bearing large enough to cause clogging?
Does disc form one side of boot?_______________
Kind of disc bearing?_________________________

Frame.

Well braced and balanced?____________________
Reinforced corners? __________________________
Single or double draw bars for furrow openers?
Main axle bearings—plain, roller or self aligning?
Are bearings easily oiled?_____________________

Levers.

How many? _________________________________
Purpose of each?_____________________________
Does lifting furrow openers throw machine out of gear? ______________________________
Power lift? __________________________________

Wheels.

Wood or steel?
Diameter?___________feet__________inches.
Width?_____________________inches.

Miscellaneous.

Covering chains or press wheels?
Seat or foot board?
Land measure provided?_______________________
Can it be adjusted?___________________________
Which of grain drills studied do you prefer?_____

TWO WHEEL CULTIVATOR.

General Information. **Exercise No. 21.**

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Single or double row?

Riding, walking or combined?

Shovels.

How many to gang?____________________________

Width?___________________inches.

Spring trip or break pin?

Shovel adjustable? ____________________________

Are shanks attached rigidly to beam or are they adjustable? _____________________________

Spring tooth attachment?______________________

Disc attachment? _____________________________

Shields.

Kind—sheet, rod or revolving?

Adjustable? __________________________________

Gangs or Rigs.

Method of guiding gangs—foot, pivotal wheel or seat shift?

Gangs remain horizontal when moved right or left? ____

Can gangs be moved independent of one another?___

Connection to frame flexible?_________________

Connection adjustable for wear?_______________

Spreading arch? ______________________________

Can distance between gangs be quickly changed?____

Frame.

How is framed balanced?_______________________

Is frame automatically balanced when gangs are raised or lowered?___________________________

Seat—kind? __________________________________

Corn can be cultivated to the height of?_____inches.

Wheels.

Diameter? _____________feet _____________inches

Width?_____________________inches.

Tire flat or concave?

Diameter axle?_______________inches.

Expanding axle?______________________________

Close as wheels can be put together?__________feet.

Widest wheels can be separated?_____________feet.

Wheel boxes protected against dirt?______________

Levers.

How many? __________________________________

Purpose of each?______________________________

Does spring aid in lifting gangs?_______________

Can spring be regulated?_____________________

Are levers easily operated from seat?___________

Can the gangs be lifted out of ground without disturbing levers that control depth of shovels?____

Miscellaneous.

Pivotal wheel? _______________________________

Height of hitch adjustable?____________________

TWO WHEEL CULTIVATOR.

General Information. **Exercise No. 21.**

Trade name and number?______________________
Manufacturer? ______________________________
Address? __________________________________
Single or double row?
Riding, walking or combined?

Shovels.

How many to gang?__________________________
Width?__________________inches.
Spring trip or break pin?
Shovel adjustable? __________________________
Are shanks attached rigidly to beam or are they adjustable? ______________________________
Spring tooth attachment?______________________
Disc attachment? ____________________________

Shields.

Kind—sheet, rod or revolving?
Adjustable? ________________________________

Gangs or Rigs.

Method of guiding gangs—foot, pivotal wheel or seat shift?
Gangs remain horizontal when moved right or left? ____________________________________
Can gangs be moved independent of one another?___
Connection to frame flexible?___________________
Connection adjustable for wear?________________
Spreading arch? ______________________________
Can distance between gangs be quickly changed?____

Frame.

How is framed balanced?________________________
Is frame automatically balanced when gangs are raised or lowered?__________________________
Seat—kind? _________________________________
Corn can be cultivated to the height of?_____inches.

Wheels.

Diameter? _____________feet _____________inches
Width?_____________________inches.
Tire flat or concave?
Diameter axle?_______________inches.
Expanding axle?______________________________
Close as wheels can be put together?___________feet.
Widest wheels can be separated?_____________feet.
Wheel boxes protected against dirt?______________

Levers.

How many? __________________________________
Purpose of each?______________________________
Does spring aid in lifting gangs?________________
Can spring be regulated?_______________________
Are levers easily operated from seat?_____________
Can the gangs be lifted out of ground without disturbing levers that control depth of shovels?____

Miscellaneous.

Pivotal wheel? _________________
Height of hitch adjustable?_____________________

TWO WHEEL CULTIVATOR.

General Information. **Exercise No. 21.**

Trade name and number?------------------------
Manufacturer? -----------------------------------
Address? --
Single or double row?
Riding, walking or combined?

Shovels.

How many to gang?------------------------------
Width?---------------------inches.
Spring trip or break pin?
Shovel adjustable? ------------------------------
Are shanks attached rigidly to beam or are they adjustable? --------------------------------------
Spring tooth attachment?------------------------
Disc attachment? --------------------------------

Shields.

Kind—sheet, rod or revolving?
Adjustable? --------------------------------------

Gangs or Rigs.

Method of guiding gangs—foot, pivotal wheel or seat shift?
Gangs remain horizontal when moved right or left?

Can gangs be moved independent of one another?---
Connection to frame flexible?-------------------
Connection adjustable for wear?-----------------
Spreading arch? ---------------------------------
Can distance between gangs be quickly changed?----

Frame.

How is framed balanced?-------------------------
Is frame automatically balanced when gangs are raised or lowered?----------------------------
Seat—kind? ---------------------------------------
Corn can be cultivated to the height of?-----inches.

Wheels.

Diameter? -------------feet -------------inches
Width?----------------------inches.
Tire flat or concave?
Diameter axle?---------------inches.
Expanding axle?---------------------------------
Close as wheels can be put together?-----------feet.
Widest wheels can be separated?-------------feet.
Wheel boxes protected against dirt?--------------

Levers.

How many? ---------------------------------------
Purpose of each?-------------------------------
Does spring aid in lifting gangs?-----------------
Can spring be regulated?-----------------------
Are levers easily operated from seat?-------------
Can the gangs be lifted out of ground without disturbing levers that control depth of shovels?----

Miscellaneous.

Pivotal wheel? -----------------
Height of hitch adjustable?----------------------
Which of cultivators studied do you prefer?--------

MOWER.

Exercise No. 22.

General Information.

Trade name and number?----------------------

Manufacturer? ------------------------------

Address? ------------------------------------

Size or width of cut?------------------feet.

Vertical, or plain lift type?

Cutter Bar.

Ledger plates—smooth or serrated?

How many wearing plates?---------------------

Length of wearing plates?------------inches.

Can bar be adjusted for both alignment and registration? ----------------------------------

Bar reinforced? -----------------------------

Bar tempered? -------------------------------

Bar curved up or down for any reason?-----------

How much will outer end of bar drop below wheel base level?--------------inches.

How high can bar be raised by adjusting shoes?----- ---------------------inches.

Is weight of bar carried on frame?---------------

Are guards strong enough to stay in alignment?----

Sickle.

How many sections? --------------------------

Knife head—steel drop forging or malleable?

How far do sections project over wearing plates? --------------------inches.

Pitman.

Material—wood or steel?

Length?------------------inches.

Method of lubricating crank end?----------------

Bearing at crank end—iron, babbitt or bronze?

Can bearing be removed?-----------------------

Connection at sickle end—malleable or hardened steel?

This connection have automatic take up for wear?---

Wheels.

Width of track, center to center?----ft.----inches

Diameter?-----------feet-----------inches.

Width of tire?--------------inches.

Rachets on inner or outer sides of wheels?

Pawls—loose or fastened in place?

Levers.

How many hand levers?_________________________

How many foot levers?__________________________

Purpose of each?_________________________________

Is clutch lever so constructed as to be operated quickly with the foot?________________________

With the operator in the seat, can bar be folded vertically or semi-vertical?

Which end of the bar picks up first when foot lever is raised? ___________________________________

Distance mower will travel after clutch is thrown in before sickle starts?____________inches.

When the tilting lever is moved from the first to the last notch, is the outer end of the cutter bar moved in a horizontal direction without the inner end being moved a like amount?______________

Levers. (Vertical Lift).

Does clutch move when foot lifting lever is used?____

Is clutch out when hand lifting lever is in front notch? _____________________________________

How high is outer edge of bar off ground when machine goes automatically out of gear?_______

Levers. (Plain Lift).

Height of inside shoe from ground when the lifting lever is in the extreme rear position and knife running? __________________________________

Maximum angle between sickle and pitman in normal position? _____________________________

Maximum angle between sickle and pitman when bar is suspended in extreme high position?________

Gearing.

Main gear—internal or external?

Is gearing well protected from dirt, trash and accidents? ____________________________________

Easily lubricated? _________________________________

Can wear in bevel gears be adjusted?____________

Ball bearing to take end thrust of bevel gear?______

Variable speed? ___________________________________

How is speed varied?________________________________

Revolutions of fly wheel per 100 inches of travel?___

Direction of rotation of fly wheel looking from driver's seat? ___________________________________

Miscellaneous.

Main axle have roller bearings?__________________

What is the highest obstruction mower will clear? ________________________inches.

With operator in seat, bar on ground, neckyoke on tongue, determine with spring balances amount of weight at point where neckyoke is attached to tongue?________________lbs.

Same with bar off ground?______________lbs.

How many oil holes on machine?________________

How many grease cups on machine?_____________

Note:—For all these tests with the mower have the front end of the tongue 32 inches from center to the ground line, unless otherwise noted on mower tongue.

MOWER.

Exercise No. 22.

General Information.

Trade name and number?------------------------

Manufacturer? ------------------------------

Address? ----------------------------------

Size or width of cut?------------------feet.

Vertical, or plain lift type?

Cutter Bar.

Ledger plates—smooth or serrated?

How many wearing plates?----------------------

Length of wearing plates?-----------inches.

Can bar be adjusted for both alignment and registration? ------------------------------

Bar reinforced? ------------------------------

Bar tempered? --------------------------------

Bar curved up or down for any reason?-----------

How much will outer end of bar drop below wheel base level?--------------inches.

How high can bar be raised by adjusting shoes?----- ---------------------inches.

Is weight of bar carried on frame?---------------

Are guards strong enough to stay in alignment?----

Sickle.

How many sections? --------------------------

Knife head—steel drop forging or malleable?

How far do sections project over wearing plates? ---------------------inches.

Pitman.

Material—wood or steel?

Length?-------------------inches.

Method of lubricating crank end?----------------

Bearing at crank end—iron, babbitt or bronze?

Can bearing be removed?----------------------

Connection at sickle end—malleable or hardened steel?

This connection have automatic take up for wear?---

Wheels.

Width of track, center to center?----ft.----inches

Diameter?-----------feet-----------inches.

Width of tire?--------------inches.

Rachets on inner or outer sides of wheels?

Pawls—loose or fastened in place?

Levers.

How many hand levers?------------------------

How many foot levers?------------------------

Purpose of each?----------------------------

Is clutch lever so constructed as to be operated quickly with the foot?---------------------

With the operator in the seat, can bar be folded vertically or semi-vertical?

Which end of the bar picks up first when foot lever is raised? ---------------------------

Distance mower will travel after clutch is thrown in before sickle starts?-----------inches.

When the tilting lever is moved from the first to the last notch, is the outer end of the cutter bar moved in a horizontal direction without the inner end being moved a like amount?--------------

Levers. (Vertical Lift).

Does clutch move when foot lifting lever is used?-----

Is clutch out when hand lifting lever is in front notch? -----------------------------

How high is outer edge of bar off ground when machine goes automatically out of gear?-------

Levers. (Plain Lift).

Height of inside shoe from ground when the lifting lever is in the extreme rear position and knife running? ---------------------------

Maxmum angle between sickle and pitman in normal position? --------------------------

Maximum angle between sickle and pitman when bar is suspended in extreme high position?--------

Gearing.

Main gear—internal or external?

Is gearing well protected from dirt, trash and accidents? ---------------------------

Easily lubricated? -----------------------------

Can wear in bevel gears be adjusted?------------

Ball bearing to take end thrust of bevel gear?------

Variable speed? -----------------------------

How is speed varied?---------------------------

Revolutions of fly wheel per 100 inches of travel?---

Direction of rotation of fly wheel looking from driver's seat? -----------------------------

Miscellaneous.

Main axle have roller bearings?----------------

What is the highest obstruction mower will clear? -------------------inches.

With operator in seat, bar on ground, neckyoke on tongue, determine with spring balances amount of weight at point where neckyoke is attached to tongue?--------------lbs.

Same with bar off ground?------------lbs.

How many oil holes on machine?---------------

How many grease cups on machine?-------------

Note:—For all these tests with the mower have the front end of the tongue 32 inches from center to the ground line, unless otherwise noted on mower tongue.

MOWER.

Exercise No. 22.

General Information.

Trade name and number?------------------------

Manufacturer? ------------------------------------

Address? --

Size or width of cut?------------------feet.

Vertical, or plain lift type?

Cutter Bar.

Ledger plates—smooth or serrated?

How many wearing plates?----------------------

Length of wearing plates-------------inches.

Can bar be adjusted for both alignment and registration? -----------------------------------

Bar reinforced? -----------------------------------

Bar tempered? ------------------------------------

Bar curved up or down for any reason?-----------

How much will outer end of bar drop below wheel base level?--------------inches.

How high can bar be raised by adjusting shoes?----- ----------------------inches.

Is weight of bar carried on frame?---------------

Are guards strong enough to stay in alignment?----

Sickle.

How many sections? ----------------------------

Knife head—steel drop forging or malleable?

How far do sections project over wearing plates? ----------------------inches.

Pitman.

Material—wood or steel?

Length?-------------------inches.

Method of lubricating crank end?----------------

Bearing at crank end—iron, babbitt or bronze?

Can bearing be removed?------------------------

Connection at sickle end—malleable or hardened steel?

This connection have automatic take up for wear?---

Wheels.

Width of track, center to center?----ft.----inches

Diameter?-----------feet-----------inches.

Width of tire?--------------inches.

Ratchets on inner or outer sides of wheels?

Pawls—loose or fastened in place?

Levers.

How many hand levers?------------------------

How many foot levers?--------------------------

Purpose of each?--------------------------------

Is clutch lever so constructed as to be operated quickly with the foot?------------------------

With the operator in the seat, can bar be folded vertically or semi-vertical?

Which end of the bar picks up first when foot lever is raised? --------------------------------

Distance mower will travel after clutch is thrown in before sickle starts?-----------inches.

When the tilting lever is moved from the first to the last notch, is the outer end of the cutter bar moved in a horizontal direction without the inner end being moved a like amount?-------------

Levers. (Vertical Lift).

Does clutch move when foot lifting lever is used?----

Is clutch out when hand lifting lever is in front notch? --------------------------------

How high is outer edge of bar off ground when machine goes automatically out of gear?-------

Levers. (Plain Lift).

Height of inside shoe from ground when the lifting lever is in the extreme rear position and knife running? ------------------------------

Maxmum angle between sickle and pitman in normal position? ----------------------------

Maximum angle between sickle and pitman when bar is suspended in extreme high position?--------

Gearing.

Main gear—internal or external?

Is gearing well protected from dirt, trash and accidents? ----------------------------

Easily lubricated? ----------------------------

Can wear in bevel gears be adjusted?-----------

Ball bearing to take end thrust of bevel gear?------

Variable speed? ----------------------------

How is speed varied?--------------------------

Revolutions of fly wheel per 100 inches of travel?---

Direction of rotation of fly wheel looking from driver's seat? ----------------------------

Miscellaneous.

Main axle have roller bearings?---------------

What is the highest obstruction mower will clear? --------------------inches.

With operator in seat, bar on ground, neckyoke on tongue, determine with spring balances amount of weight at point where neckyoke is attached to tongue?---------------lbs.

Same with bar off ground?-------------lbs.

How many oil holes on machine?---------------

How many grease cups on machine?------------

Which of the mowers studied do you prefer?-------

Note:—For all these tests with the mower have the front end of the tongue 32 inches from center to the ground line, unless otherwise noted on mower tongue.

SIDE DELIVERY HAY RAKE.

Exercise No. 23.

General Information.
Trade name and number?------------------------
Manufacturer? ----------------------------
Address? --------------------------------
Kind—reel or fork type?
Width swath raked?----------feet.

Reel Type.
Reel material—wood or steel?------------------
Length reel?----------------feet.
How many bars?----------------------------
How many teeth on each bar?-------------------
Curved or straight teeth?
Can setting of teeth be varied?------------------
Power transmitted to reel by gearing or chains?
How many stripper bars?----------------------
Are they round, flat or oval?
Are they rigid?------------------------------
Teeth conform to uneven ground?---------------
Bearings, plain or roller?
Bearings easily lubricated?--------------------

Fork Type.
Diameter crank shaft?---------------inches.
How many forks?----------------------------
How many teeth to each fork?------------------
Will forks adjust themselves to uneven ground?----
Bearings, plain or roller?
Bearings easily lubricated?--------------------
Power transmitted to forks by gearing or chain?----

Frame.
Material—wood or steel?
Well braced? ------------------------------
Corners reinforced? ------------------------

Main Wheels.
How many? --------------------------------
Diameter-----------feet-----------inches.
Width?------------------inches.
Easily lubricated? --------------------------
Bearings, plain or roller?
Lugs on wheels?----------------------------

Caster Wheels.
How many?--------------------------------
Diameter?--- -------feet------ ----inches.
Width?------------feet------------inches.
Can they be adjusted?-----------------------
Shields to prevent wrapping when tedding?--------
Bearings—plain or roller?
Easily lubricated? --------------------------

Levers.
How many? --------------------------------
Purpose of each? ---------------------------
Can it be thrown out of gear while rake is moving? --------------------------
Can it be reversed and made to do work of tedder? --------------------------
Can levers be operated from seat?---------------

SIDE DELIVERY HAY RAKE.

General Information. **Exercise No. 23.**

Trade name and number?------------------------
Manufacturer? ---------------------------------
Address? ---------------------------------------
Kind—reel or fork type?
Width swath raked?----------feet.

Reel Type.

Reel material—wood or steel?-----------------
Length reel?----------------feet.
How many bars?-------------------------------
How many teeth on each bar?------------------
Curved or straight teeth?
Can setting of teeth be varied?----------------
Power transmitted to reel by gearing or chains?
How many stripper bars?-----------------------
Are they round, flat or oval?
Are they rigid?--------------------------------
Teeth conform to uneven ground?---------------
Bearings, plain or roller?
Bearings easily lubricated?---------------------

Fork Type.

Diameter crank shaft?---------------inches.
How many forks?------------------------------
How many teeth to each fork?------------------
Will forks adjust themselves to uneven ground?----
Bearings, plain or roller?
Bearings easily lubricated?---------------------
Power transmitted to forks by gearing or chain?----

Frame.

Material—wood or steel?
Well braced? ----------------------------------
Corners reinforced? ---------------------------

Main Wheels.

How many? ------------------------------------
Diameter-----------feet-----------inches.
Width?-------------------inches.
Easily lubricated? -----------------------------
Bearings, plain or roller?
Lugs on wheels?------------------------------

Caster Wheels.

How many?-----------------------------------
Diameter?--- -------feet------ ----inches.
Width?-----------feet-------------inches.
Can they be adjusted?-------------------------
Shields to prevent wrapping when tedding?--------
Bearings—plain or roller?
Easily lubricated? ----------------------------

Levers.

How many? ------------------------------------
Purpose of each? ------------------------------
Can it be thrown out of gear while rake is moving?

Can it be reversed and made to do work of tedder?

Can levers be operated from seat?---------------

Miscellaneous.

Which rake studied do you prefer?

HAY LOADERS.

General Information. **Exercise No. 24.**

Trade name and number?____________________
Manufacturer? ____________________________
Address? _________________________________
Kind—rake or cylinder type?
Width it takes hay?______________feet.

Elevator.

Maximum height elevator will put hay?________feet.
Width at top?___________________________feet.

Wheels.

How many? _______________________________
Easily lubricated? ____________________________
Bearings—plain or roller ?
What type of lugs on wheels?___________________

Hitch.

How coupled to wagon?________________________
Can it be uncoupled from top of load?___________
Fore carriage or stiff tongue?

Cylinder Type.

One or two cylinders?_________________________
Rear cylinder hinged or rigid?
If hinged, is it spring adjusted?_________________
Cylinder material—wood or steel?
Diameter of cylinder?____________feet.
How many rows of teeth?______________________
How far are teeth apart?______________________
Teeth adjust themselves to ground?______________
What prevents hay from following cylinder clear around? _______________________________
Is there anything to prevent hay from following endless apron down between wagon and loader?____
Frame material—wood or steel?
Chain or gear drive?
Distance passed over per revolution of cylinder?____ __________________feet.

Rake Type.

How many bars with rakes?_____________________
How many rakes to bar?_______________________
Bars material—wood or steel?
Investigate method used to give motion to bars?____
Ground rakes adjust themselves to ground conditions? ____________________
Ground rakes drag or lift hay?__________________
Can each rake bar independent of others adjust itself to uneven ground?________________________
Crank shaft diameter?_________________________
Bearings easily lubricated?_____________________
What prevents hay from falling between wagon and loader? ________________________________
Chain, gear or gearless drive?
Distance passed over per stroke of each group of bars? __________________feet.
Maximum opening from lower edge of the inclined deck to ground?_______feet. Min.________feet.
Ground wheels set under loader far enough to allow machine to go close to fences and ditches?_____

Miscellaneous.

How many roller bearings on machine?___________

HAY LOADERS.

General Information. **Exercise No. 24.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? __________________________________

Kind—rake or cylinder type?

Width it takes hay?_____________feet.

Elevator.

Maximum height elevator will put hay?________feet.

Width at top?__________________________feet.

Wheels.

How many? ________________________________

Easily lubricated? ___________________________

Bearings—plain or roller ?

What type of lugs on wheels?__________________

Hitch.

How coupled to wagon?_______________________

Can it be uncoupled from top of load?___________

Fore carriage or stiff tongue?

Cylinder Type.

One or two cylinders?________________________

Rear cylinder hinged or rigid?

If hinged, is it spring adjusted?_________________

Cylinder material—wood or steel?

Diameter of cylinder?____________feet.

How many rows of teeth?______________________

How far are teeth apart?______________________

Teeth adjust themselves to ground?_____________

What prevents hay from following cylinder clear around? ________________________________

Is there anything to prevent hay from following endless apron down between wagon and loader?____

Frame material—wood or steel?

Chain or gear drive?

Distance passed over per revolution of cylinder____ __________________feet.

Rake Type.

How many bars with rakes?____________________

How many rakes to bar?______________________

Bars material—wood or steel?

Investigate method used to give motion to bars?

Ground rakes adjust themselves to ground conditions? ___________________

Ground rakes drag or lift hay?__________________

Can each rake bar independent of others adjust itself to uneven ground?______________________

Crank shaft diameter?_________________________

Bearings easily lubricated?_____________________

What prevents hay from falling between wagon and loader? _________________________________

Chain, gear or gearless drive?

Distance passed over per stroke of each group of bars? _________________feet.

Maximum opening from lower edge of the inclined deck to ground?_______feet. Min.________feet.

Ground wheels set under loader far enough to allow machine to go close to fences and ditches?_____

Miscellaneous.

How many roller bearings on machine?__________

Which of loaders studied do you prefer?__________

GRAIN BINDERS.

General Information. **Exercise No. 25.**

Trade name and number?______________________
Manufacturer? ______________________________
Address? __________________________________
Width of cut?_______________feet.
Right or left hand?

Main Wheel.

Diameter?__________feet___________inches.
Width of tire?________________inches.
Bearings—plain, ball or roller?

Grain Wheel.

Diameter?__________________feet.
Width tire?_________________inches.
Bearings—plain, ball or roller?
Easily lubricated? ____________________________
Bottom of wheel inside of point of outside divider? ____________________inches.

Main Drive Chain.

Width of links?_______________inches.
Links steel or malleable?
Links with or without pins?
How is chain tightened?_____________________

Counter Shaft.

Bearings—plain, ball or roller,—self aligning?
Can bearings be adjusted for wear?______________
Can shaft be adjusted to give proper mesh to gears? __________________________

Crank Shaft.

Bearings—plain, ball or roller,—self aligning?
Investigate operation of clutch?________________

Sickle.

How many sections?___________________________
How is pitman connected to sickle?_____________
Sections—plain or serrated?
Is sickle head protected?______________________
Revolutions of crank shaft to 100 inches travel of machine?__________________
Direction of rotation of fly wheel looking from driver's seat? ______________________________

Cutter Bar.

Ledger plates—smooth or serrated?
Separate wearing plates?_______________________
Clips—malleable or steel?

Pitman.

Material—wood or steel?
Easily removed if broken?______________________
Bearings at crank easily lubricated?_____________
Bearing bushing at crank end—iron, babbitt or bronze?

Bevel Gear.

How many on machine?_________________________
Can they be adjusted for wear?________________
Are they protected?___________________________

Elevators.

Open or closed type?-------------------------

Does loose or tight side of canvases run next to grain? ---------------------------------------

How are elevators squared up?-------------------

Distance grain is elevated above platform bottom? --------------------feet.

Can canvas be loosened or tightened by any other means than straps?------------------------

Travel of elevator apron per 100 inches travel of machine?---------------inches.

Travel of platform apron per 100 inches travel of machine?---------------inches.

Binder Attachment.

Twine tension kind? --------------------------

How many packers?---------------------------

How many discharge arms?---------------------

Has needle a steel roller in eye?-----------------

Kind of butter—canvas, wood or steel?

Twine box handy to seat?----------------------

Determine how to thread machine and tie knot.

How are size and tightness of bundles regulated? ---------------------------------------

Transporting Attachment.

Extra wheels easily removed and replaced?--------

Tongue easily adjusted?------------------------

Can inside and outside grain divide be adjusted?----

How narrow and low a place can be gone thru? Width?--------feet. Height?--------feet.

Reel.

How far in front of sickle can it be adjusted?---feet.

How near ground can it be lowered?--------------

How many slats?-----------------------------

Can reel be folded back?----------------------

Outer end supported?-------------------------

How many spiders?---------------------------

Travel of reel slat per 100 inches travel of machine? -------------------inches.

How is reel driven—chain or gear?

Bundle Carriers.

Unloads by tipping or swinging?

If it hits an obstacle will it move out of way?-------

Will it scatter the bundles?--------------------

Does carrier raise from stubble before swinging into position? ---------------------------------

Levers.

How many hand levers?------------------------

How many foot levers?------------------------

Purpose of each?-----------------------------

Can they be easily operated from seat?-----------

Frame.

Form of steel used, angle, I beam, channel or square steel tube?

Do you consider frame strong and well balanced?---

Miscellaneous.

Has binder a tongue truck?---------------------

GRAIN BINDERS.

General Information. **Exercise No. 25.**

Trade name and number?______________________

Manufacturer? _________________________________

Address? ___________________________________

Width of cut?_______________feet.

Right or left hand?

Main Wheel.

Diameter?__________feet___________inches.

Width of tire?________________inches.

Bearings—plain, ball or roller?

Grain Wheel.

Diameter?___________________feet.

Width tire?__________________inches.

Bearings—plain, ball or roller?

Easily lubricated? ____________________________

Bottom of wheel inside of point of outside divider? _____________________inches.

Main Drive Chain.

Width of links?_______________inches.

Links steel or malleable?

Links with or without pins?

How is chain tightened?______________________

Counter Shaft.

Bearings—plain, ball or roller,—self aligning?

Can bearings be adjusted for wear?______________

Can shaft be adjusted to give proper mesh to gears? __________________________

Crank Shaft.

Bearings—plain, ball or roller,—self aligning?

Investigate operation of clutch?________________

Sickle.

How many sections?___________________________

How is pitman connected to sickle?______________

Sections—plain or serrated?

Is sickle head protected?______________________

Revolutions of crank shaft to 100 inches travel of machine?___________________

Direction of rotation of fly wheel looking from driver's seat? ________________________________

Cutter Bar.

Ledger plates—smooth or serrated?

Separate wearing plates?______________________

Clips—malleable or steel?

Pitman.

Material—wood or steel?

Easily removed if broken?____________________

Bearings at crank easily lubricated?_____________

Bearing bushing at crank end—iron, babbitt or bronze?

Bevel Gear.

How many on machine?_________________________

Can they be adjusted for wear?________________

Are they protected?__________________________

Elevators.

Open or closed type?________________________
Does loose or tight side of canvases run next to grain?
____
How are elevators squared up?__________________
Distance grain is elevated above platform bottom?
____________________feet.
Can canvas be loosened or tightened by any other means than straps?________________________
Travel of elevator apron per 100 inches travel of machine?________________inches.
Travel of platform apron per 100 inches travel of machine?________________inches.

Binder Attachment.

Twine tension kind? __________________________
How many packers?____________________________
How many discharge arms?______________________
Has needle a steel roller in eye?_________________
Kind of butter—canvas, wood or steel.
Twine box handy to seat?_______________________
Determine how to thread machine and tie knot.
How are size and tightness of bundles regulated?
____

Transporting Attachment.

Extra wheels easily removed and replaced?________
Tongue easily adjusted?_________________________
Can inside and outside grain divide be adjusted?____
How narrow and low a place can be gone thru?
Width?________feet. Height?________feet.

Reel.

How far in front of sickle can it be adjusted?___feet.
How near ground can it be lowered?______________
How many slats?______________________________
Can reel be folded back?_______________________
Outer end supported?__________________________
How many spiders?____________________________
Travel of reel slat per 100 inches travel of machine?
___________________inches.
How is reel driven—chain or gear?

Bundle Carriers.

Unloads by tipping or swinging?
If it hits an obstacle will it move out of way?_______
Will it scatter the bundles?_____________________
Does carrier raise from stubble before swinging into position? ______________________________

Levers.

How many hand levers?_________________________
How many foot levers?_________________________
Purpose of each?______________________________
Can they be easily operated from seat?___________

Frame.

Form of steel used, angle, I beam, channel or square steel tube?
Do you consider frame strong and well balanced?___

Miscellaneous.

Has binder a tongue truck?_____________________
Which of the grain binders studied do you prefer?___

CORN BINDER.

General Information. **Exercise No. 26.**

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Frame.

Form of steel used—angle, I beam, channel or square steel tube?

Do you consider frame strong and well braced?_____

Main Wheel.

Diameter?__________feet___________inches.

Width of tire?________________inches?

Bearings—plain, ball or roller,—self aligning?

Side Wheel.

Diameter?__________________feet.

Width tire? ___________________inches.

Bearings—plain, ball or roller?

Easily lubricated? ____________________________

Main Drive From Main Wheel.

Gear or chain drive?

Width of links?____________inches.

Links steel or malleable?

Links with or without pins?

How is chain tightened?_________________________

Counter Shaft.

How many? __________________________________

Bearings—plain, ball or roller,—self aligning?

Can bearings be adjusted for wear?_____________

Crank Shaft.

Bearings—plain, ball or roller,—self aligning?

Investigate operation of clutch?________________

Sickle.

How many sections?____________________________

How does size and thickness of section compare with that used on mower?______________________

How is pitman connected to sickle?______________

Sections—plain or serrated?

Is sickle head protected?_______________________

Revolutions of crank shaft to 100 inches travel of machine? ________________________________

Direction of rotation of fly wheel looking from driver's seat? ____________________________

Any side knives? _____________________________

Can they be adjusted?___________ ____________

Pitman.

Material—wood or steel?

Easily removed if broken?----------------------

Bearings at crank easily lubricated?--------------

Bushing bearing at crank end—iron, babbitt or bronze?

Bevel Gear.

How many on machine?-------------------------

Can they be adjusted for wear?------------------

Are they protected?----------------------------

Carrier Chains.

How many? ------------------------------------

Malleable or steel?

Lugs on every link?----------------------------

How are chains tightened?-----------------------

Travel of chains per 100 inches travel of machine? --------------------inches.

Binder Attachment.

Twine tension kind?----------------------------

How many packers?-----------------------------

How many discharge arms?----------------------

Has needle a steel roller in eye?-----------------

How is height of band changed?-----------------

How many inches can band be changed?-----------

Twine box handy to seat?-----------------------

How many trips?-------------------------------

Does it bind bundles in vertical, inclined or horizontal position?

Bundle Carriers.

Kind of carrier?-------------------------------

Unloads by tipping or swinging?

If it hits an obstacle will it move out of the way?----

Will it scatter the bundles?---------------------

Does carrier raise from stubble before swinging into position? ------------------------------------

Levers.

How many hand levers?-------------------------

How many foot levers?-------------------------

Purpose of each?------------------------------

Can they be easily operated from seat?-----------

Miscellaneous.

Has binder a tongue truck?----------------------

CORN BINDER.

General Information. **Exercise No. 26.**

Trade name and number?___________________________
Manufacturer? _________________________________
Address? _______________________________________

Frame.

Form of steel used—angle, I beam, channel or square steel tube?
Do you consider frame strong and well braced?_____

Main Wheel.

Diameter?___________feet____________inches.
Width of tire?_________________inches?
Bearings—plain, ball or roller,—self aligning?

Side Wheel.

Diameter?____________________feet.
Width tire? ______________________inches.
Bearings—plain, ball or roller?
Easily lubricated? ________________________________

Main Drive From Main Wheel.

Gear or chain drive?
Width of links?_____________inches.
Links steel or malleable?
Links with or without pins?
How is chain tightened?___________________________

Counter Shaft.

How many? _______________________________________
Bearings—plain, ball or roller,—self aligning?
Can bearings be adjusted for wear?______________

Crank Shaft.

Bearings—plain, ball or roller,—self aligning?
Investigate operation of clutch?___________________

Sickle.

How many sections?_____________________________
How does size and thickness of section compare with that used on mower?__________________________
How is pitman connected to sickle?_______________
Sections—plain or serrated?
Is sickle head protected?___________________________
Revolutions of crank shaft to 100 inches travel of machine? ____________________________________
Direction of rotation of fly wheel looking from driver's seat? ______________________________
Any side knives? _________________________________
Can they be adjusted?_____________________________

Pitman.

Material—wood or steel?

Easily removed if broken?----------------------

Bearings at crank easily lubricated?--------------

Bushing bearing at crank end—iron, babbitt or bronze?

Bevel Gear.

How many on machine?-------------------------

Can they be adjusted for wear?------------------

Are they protected?----------------------------

Carrier Chains.

How many? ---------------------------------------

Malleable or steel?

Lugs on every link?----------------------------

How are chains tightened?----------------------

Travel of chains per 100 inches travel of machine? ---------------------inches.

Binder Attachment.

Twine tension kind?----------------------------

How many packers?-----------------------------

How many discharge arms?----------------------

Has needle a steel roller in eye?-----------------

How is height of band changed?-----------------

How many inches can band be changed?------------

Twine box handy to seat?------------------------

How many trips?--------------------------------

Does it bind bundles in vertical, inclined or horizontal position?

Bundle Carriers.

Kind of carrier?---------------------------------

Unloads by tipping or swinging?

If it hits an obstacle will it move out of the way?----

Will it scatter the bundles?----------------------

Does carrier raise from stubble before swinging into position? -----------------------------------

Levers.

How many hand levers?--------------------------

How many foot levers?--------------------------

Purpose of each?-------------------------------

Can they be easily operated from seat?-----------

Miscellaneous.

Has binder a tongue truck?-----------------------

Which of the corn binders studied do you prefer?---

POTATO DIGGER.

General Information. **Exercise No. 27.**

Trade name and number?----------------------

Manufacturer? ------------------------------------

Address? ---------------------------------------

Elevator.

Made of rods or discs?

Rods of uniform height or are some higher than others? ---------------------------------

Provision for shaking apron?--------------------

Length of elevator?----------------------------

Width of elevator?-----------------------------

Width of throat?--------------------------------

Number of rollers that support elevator?----------

Rollers easily oiled?---------------------------

Rollers easily removed?------------------------

How is tension of apron adjusted?---------------

Driven by gears or chain?

From one or both wheels?---------------------

Shaker.

Investigate its operation?----------------------

Is it adjustable?-------------------------------

Levers.

How many? ---------------------------------

Purpose of each? ------------------------------

Wheels.

Diameter? ------------------------------------

Width of tire?----------------------------------

Material—cast iron or steel?

Lugs? --

Bearings protected against dirt?-----------------

Bearings easily lubricated?----------------------

Oil or grease?-----------------------------------

Roller bearings? --------------------------------

Miscellaneous.

Tongue truck? ------------------------------------

Easily thrown in and out of gear from seat?-------

Can digger be backed up?-----------------------

Sacking attachment? ---------------------------

POTATO DIGGER.

General Information. **Exercise No. 27.**

Trade name and number?______________________

Manufacturer? ____________________________

Address? ________________________________

Elevator.

Made of rods or discs?

Rods of uniform height or are some higher than others? ________________________________

Provision for shaking apron?_________________

Length of elevator?_______________________

Width of elevator? ________________________

Width of throat?__________________________

Number of rollers that support elevator?__________

Rollers easily oiled?_______________________

Rollers easily removed?_____________________

How is tension of apron adjusted?______________

Driven by gears or chain?

From one or both wheels?____________________

Shaker.

Investigate its operation?____________________

Is it adjustable?___________________________

Levers.

How many? _______________________________

Purpose of each? __________________________

Wheels.

Diameter? ________________________________

Width of tire?_____________________________

Material—cast iron or steel?

Lugs? ___________________________________

Bearings protected against dirt?_______________

Bearings easily lubricated?____________________

Oil or grease?_____________________________

Roller bearings? ___________________________

Miscellaneous.

Tongue truck? ____________________________

Easily thrown in and out of gear from seat?_______

Can digger be backed up?____________________

Sacking attachment? _______________________

Which of diggers studied do you prefer?__________

ENSILAGE CUTTER.

General Information. **Exercise No. 28.**

Trade name and number?------------------------

Manufacturer? --------------------------------

Address? ------------------------------------

Rated capacity?-------------------tons per hour.

Power required?--------------------------H. P.

Knives.

Kind—radial, curved or spiral?

Length of cutting edge?--------------inches.

How many? -----------------------------------

Thickness?----------------inches.

How many bolts holding knife on?--------------

Size of bolts?--------------------------------

Easily removed? ------------------------------

Easily sharpened? ----------------------------

Each knife adjustable to cutting edge?-----------

Cutter Head.

Material—cast iron or steel?

R. P. M.? -------------------------------------

Diameter?-----------------inches.

Diameter shaft?--------------inches.

Cutter head accessible?-------------------------

Adjustable to shear plate?----------------------

Feeding Mechanism.

Diameter feed rollers-------------inches.

Length feed rollers?------------inches.

Describe surface of feed rolls?------------------

Spring or weight on upper roller?----------------

Upper roller adapts itself to feed providing more comes on one side than other?---------------

All parts necessary to make changes of cut on machine all the time?-------------------------

Maximum length of cut?-------------inches.

Minimum length of cut?-------------inches.

Feed table apron—wood or steel?

Feed rollers driven by gearing or chain?

Is gearing or chain well protected?--------------

Levers.

How many? ----------------------------------

Purpose of each?------------------------------

Reverse lever for emergencies, handy and quickly operated? ----------------------------

Elevator.

Blower or carrier?

Diameter blower pipe?--------------------------

How many fan blades?--------------------------

Are blades renewable?--------------------------

Fan attached to cutter head?--------------------

R. P. M. of blower?----------------------------

Can speed of fan be varied?--------------------

How is silage fed to elevator?-----------------

How is fan housing cleaned when it becomes clogged?

Shear Plate.

Material? ----------------------------------

Adjustable? --------------------------------

Can it be reversed in order to get new cutting edge?

Pulley.

Diameter?----------------inches.

Width?--------------------inches.

Rim speed is----------------feet per second.

Break pin? ---------------------------------

Provision for taking up end play in main shaft?-----

Frame.

Wood, cast iron, steel (channel or angles)?

Bolted or riveted?

Mounted on trucks?--------------------------

Bearings.

How many roller bearings?---------------------

How many self aligning boxes?-----------------

How many oil holes?---------------------------

Do boxes have removable bearings?--------------

Miscellaneous.

Knife grinding attachment?---------------------

How is length of cut changed on this machine?-----

What lengths of cut can be made?---------------

ENSILAGE CUTTER.

General Information. **Exercise No. 28.**

Trade name and number?------------------------

Manufacturer? --------------------------------

Address? ------------------------------------

Rated capacity?-------------------tons per hour.

Power required?---------------------------H. P.

Knives.

Kind—radial, curved or spiral?

Length of cutting edge?--------------inches.

How many? -----------------------------------

Thickness?----------------inches.

How many bolts holding knife on?---------------

Size of bolts?---------------------------------

Easily removed? -------------------------------

Easily sharpened? -----------------------------

Each knife adjustable to cutting edge?-----------

Cutter Head.

Material—cast iron or steel?

R. P. M.? -------------------------------------

Diameter?-----------------inches.

Diameter shaft?---------------inches.

Cutter head accessible?--------------------------

Adjustable to shear plate?-----------------------

Feeding Mechanism.

Diameter feed rollers-------------inches.

Length feed rollers?------------inches.

Describe surface of feed rolls?-------------------

Spring or weight on upper roller?-----------------

Upper roller adapts itself to feed providing more comes on one side than other?---------------

All parts necessary to make changes of cut on machine all the time?--------------------------

Maximum length of cut?--------------inches.

Minimum length of cut?--------------inches.

Feed table apron—wood or steel?

Feed rollers driven by gearing or chain?

Is gearing or chain well protected?---------------

Levers.

How many? -----------------------------------

Purpose of each?--------------------------------

Reverse lever for emergencies, handy and quickly operated? --------------------------------

Elevator.

Blower or carrier?

Diameter blower pipe?________________________

How many fan blades?________________________

Are blades renewable?________________________

Fan attached to cutter head?________________

R. P. M. of blower?__________________________

Can speed of fan be varied?_________________

How is silage fed to elevator?______________

How is fan housing cleaned when it becomes clogged?

____

Shear Plate.

Material? ________________________________

Adjustable? ______________________________

Can it be reversed in order to get new cutting edge?

____

Pulley.

Diameter?_______________inches.

Width?__________________inches.

Rim speed is______________feet per second.

Break pin? _______________________________

Provision for taking up end play in main shaft?_____

Frame.

Wood, cast iron, steel (channel or angles)?

Bolted or riveted?

Mounted on trucks?___________________________

Bearings.

How many roller bearings?____________________

How many self aligning boxes?________________

How many oil holes?__________________________

Do boxes have removable bearings?____________

Miscellaneous.

Knife grinding attachment?___________________

How is length of cut changed on this machine?_____

What lengths of cut can be made?_____________

ENSILAGE CUTTER.

General Information. **Exercise No. 28.**

Trade name and number?_________________________

Manufacturer? _______________________________

Address? ___________________________________

Rated capacity?___________________tons per hour.

Power required?___________________________H. P.

Knives.

Kind—radial, curved or spiral?

Length of cutting edge?______________inches.

How many? _________________________________

Thickness?_________________inches.

How many bolts holding knife on?_____________

Size of bolts?___________________________________

Easily removed? _______________________________

Easily sharpened? ______________________________

Each knife adjustable to cutting edge?___________

Cutter Head.

Material—cast iron or steel?

R. P. M.? ___________________________________

Diameter?__________________inches.

Diameter shaft?_______________inches.

Cutter head accessible?________________________

Adjustable to shear plate?______________________

Feeding Mechanism.

Diameter feed rollers_____________inches.

Length feed rollers?____________inches.

Describe surface of feed rolls?___________________

Spring or weight on upper roller?________________

Upper roller adapts itself to feed providing more comes on one side than other?________________

All parts necessary to make changes of cut on machine all the time?__________________________

Maximum length of cut?______________inches.

Minimum length of cut?______________inches.

Feed table apron—wood or steel.

Feed rollers driven by gearing or chain?

Is gearing or chain well protected?________________

Levers.

How many? ___________________________________

Purpose of each?__________________________________

Reverse lever for emergencies, handy and quickly operated? _________________________________

Elevator.

Blower or carrier?

Diameter blower pipe?------------------------

How many fan blades?------------------------

Are blades renewable?------------------------

Fan attached to cutter head?------------------

R. P. M. of blower?---------------------------

Can speed of fan be varied?-------------------

How is silage fed to elevator?-----------------

How is fan housing cleaned when it becomes clogged?

Shear Plate.

Material? ---------------------------------

Adjustable? -------------------------------

Can it be reversed in order to get new cutting edge?

Pulley.

Diameter?----------------inches.

Width?------------------inches.

Rim speed is---------------feet per second.

Break pin? --------------------------------

Provision for taking up end play in main shaft?-----

Frame.

Wood, cast iron, steel (channel or angles)?

Bolted or riveted?

Mounted on trucks?--------------------------

Bearings.

How many roller bearings?--------------------

How many self aligning boxes?-----------------

How many oil holes?--------------------------

Do boxes have removable bearings?--------------

Miscellaneous.

Knife grinding attachment?---------------------

How is length of cut changed on this machine?-----

What lengths of cut can be made?---------------

Which cutter studied do you prefer?-------------

BUHR FEED MILL.

General Information. **Exercise No. 29.**

Trade name and number?______________________

Manufacturer? ________________________________

Address? ___________________________________

Vertical or horizontal?________________________

Materials can be ground—shelled corn; corn and cob; corn, cob and shuck; corn cobs; velvet beans in pod, Kafir corn; milo maize, feterita?

Capacity shelled corn, pounds per hour?__________

Power—sweep or pulley?

Power required?_______________H. P.

Grinding Device.

Buhrs—flat, cylindrical or conical?

Buhrs—simple or duplex?

Buhrs material—chilled iron, steel or stone?

R. P. M. of buhrs?_____________________________

Safety device for stone, nails, bolts, etc.?_________

Safety device consist—spring or break pin?

How is adjustment of fineness of feed made?______

Hopper.

Divided?

Capacity?__________________bushels.

Material—wood, steel or iron?

Feed.

Force or gravity?

Crusher—cast iron or steel?

Frame.

Material—wood, iron or steel?

Well made and braced?_________________________

Levers.

How many? __________________________________

Purpose of each?______________________________

Miscellaneous.

Elevator attachment?

Fly wheel?

Drive pulley inside or outside frame?

Width pulley?_______________inches.

Rim speed of pulley is____________feet per second.

BUHR FEED MILL.

General Information. **Exercise No. 29.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? ___________________________________

Vertical or horizontal?_______________________

Materials can be ground—shelled corn; corn and cob; corn, cob and shuck; corn cobs; velvet beans in pod, Kafir corn; milo maize, feterita?

Capacity shelled corn, pounds per hour?__________

Power—sweep or pulley?

Power required?_______________H. P.

Grinding Device.

Buhrs—flat, cylindrical or conical?

Buhrs material—chilled iron, steel or stone?

R. P. M. of buhrs?_____________________________

Safety device for stone, nails, bolts, etc.?_________

Safety device consist—spring or break pin?

How is adjustment of fineness of feed made?______

Hopper.

Divided?

Capacity?__________________bushels.

Material—wood, steel or iron?

Feed.

Force or gravity?

Crusher—cast iron or steel?

Frame.

Material—wood, iron or steel?

Well made and braced?_________________________

Levers.

How many? ________________________________

Purpose of each?_____________________________

Miscellaneous.

Elevator attachment?

Fly wheel?

Drive pulley inside or outside frame?

Width pulley?_______________inches.

Rim speed of pulley is____________feet per second.

Which mill studied do you prefer?________________

HAMMER FEED MILL.

General Information. **Exercise No. 30.**

Trade name and number?________________________

Manufacturer? _______________________________________

Address? ____

Materials can be ground—shelled corn; corn and cob; corn; cob and shuck; corn cobs; velvet beans in pod; hay; straw; Kafir corn; milo maize; feterita?

Capacity shelled corn, pounds per hour?__________

Power required to operate?________________H.P.

Hammers.

Rigid or loose on shaft?

Size—width?_______inches; thickness_______inches.

Length?____________________inches.

Number of hammers in row?___________________

Number of rows of hammers?__________________

One or two cylinders?_________________________

Can hammers be reversed when worn?____________

R.P.M. of hammers?___________________________

How is adjustment for fineness of feed made?_____

Hopper.

Divided? ____

Capacity?____________________bushels.

Material—cast iron, cast steel, or sheet steel?

Screens.

Wire or sheet steel with holes cut in?

Easily put in and taken out?____________________

Frame.

Material—wood, iron, or steel?

Well made and braced?__________________________

Levers.

How many? _______________________________________

Purpose of each?_______________________________

Miscellaneous.

Plain, roller or ball bearings on shaft?

Elevator attachment? ___________________________

Fly wheel? ______________________________________

Width of pulley?_______________inches.

Rim speed of pulley is_____________feet per second.

HAMMER FEED MILL.

General Information. **Exercise No. 30.**

Trade name and number?______________________

Manufacturer? ________________________________

Address? ___________________________________

Materials can be ground—shelled corn; corn and cob; corn; cob and shuck; corn cobs; velvet beans in pod; hay; straw; Kafir corn; milo maize; feterita?

Capacity shelled corn, pounds per hour?__________

Power required to operate?_________________H.P.

Hammers.

Rigid or loose on shaft?

Size—width?_______inches; thickness_______inches.

Length?_____________________inches.

Number of hammers in row?__________________

Number of rows of hammers?_________________

One or two cylinders?_________________________

Can hammers be reversed when worn?____________

R.P.M. of hammers?__________________________

How is adjustment for fineness of feed made?_____

Hopper.

Divided? ___________________________________

Capacity?___________________bushels.

Material—cast iron, cast steel, or sheet steel?

Screens.

Wire or sheet steel with holes cut in?

Easily put in and taken out?____________________

Frame.

Material—wood, iron, or steel?

Well made and braced?________________________

Levers.

How many? _________________________________

Purpose of each?_____________________________

Miscellaneous.

Plain, roller or ball bearings on shaft?

Elevator attachment? ___________________________

Fly wheel? __________________________________

Width of pulley?_______________inches.

Rim speed of pulley is______________feet per second.

Which mill studied do you prefer?_______________

FANNING MILLS.

General Information. **Exercise No. 31.**

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Operated by hand or power?

Capacity cleaning oats?_____________bu. per hour.

Hopper.

Size?_____________bushels.

Agitator? ___________________________________

How feed regulated?___________________________

Will feed stop when machine stops?_____________

Shoe.

Side or end shake?

Can shaking be adjusted from a long stroke to a short quick one?____________________________

Number of screens and sieves that shoes will handle?

____

Is shoe substantial?__________________________

Screens.

Size—width?_________feet; Length_________feet.

How many? __________________________________

Kinds of openings—slots or round?

Can pitch of screens be adjusted?______________

Fan.

Where located? ______________________________

R. P. M.?____________________________________

How is blast regulated?_______________________

Miscellaneous.

Machine well built and substantial?____________

Wood throughout? ____________________________

On what principle does machine operate?—size, shape or weight of kernel?

What seeds will this machine clean: wheat, rye, oats, barley, peas, beans, clover, alfalfa, lespedeza, timothy, alsike, red top, flax or millet?

Corn grading attachment?______________________

Elevator and bagger?__________________________

FANNING MILLS.

General Information. **Exercise No. 31.**

Trade name and number?______________________

Manufacturer? ___________________________

Address? ________________________________

Operated by hand or power?

Capacity cleaning oats?____________bu. per hour.

Hopper.

Size?____________bushels.

Agitator? _______________________________

How feed regulated?__________________________

Will feed stop when machine stops?_____________

Shoe.

Side or end shake?

Can shaking be adjusted from a long stroke to a short quick one?_________________________

Number of screens and sieves that shoes will handle?

____

Is shoe substantial?_______________________

Screens.

Size—width?_________feet; Length_________feet.

How many? ______________________________

Kinds of openings—slots or round?

Can pitch of screens be adjusted?____________

Fan.

Where located? ____________________________

R. P. M.?________________________________

How is blast regulated?_______________________

Miscellaneous.

Machine well built and substantial?_____________

Wood throughout? __________________________

On what principle does machine operate?—size, shape or weight of kernel?

What seeds will this machine clean: wheat, rye, oats, barley, peas, beans, clover, alfalfa, lespedeza, timothy, alsike, red top, flax or millet?

Corn grading attachment?_____________________

Elevator and bagger?_________________________

Which of the fanning mills studied do you prefer?__

MANURE SPREADERS.

General Information. **Exercise No. 32.**

Trade name and number?______________________

Manufacturer? ____________________________

Address? _______________________________

Rated capacity?____________bushels.

Box.

Material—wood or steel?

Dimensions? Width_____Length______Depth______

Contents box?__________ cu. ft.___________bushels

(1 bushel equals 1.25 cubic feet).

Height of top of box above ground?__________feet.

Is box wider at rear than at front?______________

Does bed slope to rear?________________________

How much? ________________________________

Does box have tight bottom?___________________

Does apron have two or three rails to roll on?_____

Can sides be let down?________________________

Wheels.

Material—wood or steel?

Size—diameter of front_______; rear_______feet.

Width of front________; rear________feet.

Kind traction lugs? ___________________________

Wheels track? _______________________________

Width of track? Front____________inches.

Width of track? Rear____________inches.

Diameter of axles?______________inches.

Spokes cast in hub and upset in rim?_____________

Rims flanged? _______________________________

Beater (Main)

In one section or how many?____________________

Diameter to tips of teeth?__________________feet.

Length of teeth?________________inches.

Teeth sharp or blunt?_________________________

Are teeth in regular or irregular rows?___________

How are teeth fastened in?______________________

Distance beater projects below top or apron?____in.

How many bars?_____________________________

Bars—wood or steel?

Have bars center support?______________________

Can beater be operated without moving apron?_____

Beater (Auxiliary).

Diameter to tips of teeth?______________________

How many bars?______________________________

Bars—wood or steel?

Length of teeth in inches?____________________

Which direction does this turn with relation to main beater? ______________________________

Rake.

Has spreader a rake?_________________________

Movable or stationary?

How many teeth? ______________________________

Length of teeth?_____________inches.

Is it flexible enough to allow passage of larger lumps? ___________________________________

Apron.

Endless or return?

Does apron slide over solid floor?_______________

Has apron rollers?_____________________________

How many rollers?_____________________________

Apron self cleaning? __________________________

Can apron be tightened?_________________________

Return apron by power, hand or both?

How are slats fastened to apron?________________

How is apron tightened?_________________________

Beater Drive.

Power transmitted from drive wheel by gears, chain or both?

Chain—steel or malleable, with or without steel pins

Chain tightener? ______________________________

Driven from one or both sides?__________________

When starting up does beater retreat a little at first?

____

Size of beater shaft?____________inches.

Gearing well protected? ________________________

Where is clutch located?________________________

Number of revolutions main beater makes to one revolution of wheels?_________________________

Number of revolutions auxiliary beater makes to one revolution of wheels?______________________

How does number of feet travelled by outside of main beater and wheel compare?_____________

Beater travel?______feet? wheel travel?______feet.

Apron Drive.

Rachet or worm?
How is power obtained to drive apron?____________

How many speeds?____________________________

Can speeds be changed while spreader is in motion?

____

Does worm run in oil?____________________ ____

Is rachet single or double?______________________

If rachet drive is there any provision made to prevent apron from racing when going up hill?____

Gearing well protected?________________________

Distance travelled by apron during one revolution of main wheel?—max._______feet; min._______ft.

Bearings.

Main axle have roller bearings?___________________

Beaters have roller bearings?_____________________

How many roller bearings on machine?____________

Do all roller bearings have self aligning boxes?____

How lubricated—by oil or grease cups?___________

How many oil holes?________grease cups-________ on spreader.

Levers.

How many hand?_____________________________

How many foot?_____________________________

Purpose of each? ____________________________

Can apron be run against beater without running beater? _______________________________________

Can both forward and backward motion of apron be thrown in at the same time?________________

Levers easily operated from seat?_______________

Hitch.

Two or three horse combination?_______________

Thrills used with three horses?__________________

Tongue attached to front axle or frame?__________

Auto type of steering?__________________________

Diameter smallest circle spreader will turn in?___ft.

Miscellaneous.

What is the highest obstruction spreader will clear?

____

Is there a rear end gate? ___ ___ ___ __ _______

If not ,what provision is made to assist in starting to unload? __________________________________

How operated? ______________________________

Is there a wide spread attachment?______________

What kind? __________________________________

MANURE SPREADERS.

General Information. **Exercise No. 32.**

Trade name and number?________________________

Manufacturer? ____________________________

Address? _______________________________

Rated capacity?____________bushels.

Box.

Material—wood or steel?

Dimensions? Width_____Length______Depth______

Contents box?__________ cu. ft.__________bushels

(1 bushel equals 1.25 cubic feet).

Height of top of box above ground?__________feet.

Is box wider at rear than at front?_______________

Does bed slope to rear?________________________

How much? _________________________________

Does box have tight bottom?____________________

Does apron have two or three rails to roll on?______

Can sides be let down?_________________________

Wheels.

Material—wood or steel?

Size—diameter of front_______; rear_______feet.

Width of front________; rear________feet.

Kind traction lugs? ____________________________

Wheels track? _________________________________

Width of track? Front____________inches.

Width of track? Rear____________inches.

Diameter of axles?______________inches.

Spokes cast in hub and upset in rim?_____________

Rims flanged? _________________________________

Beater (Main)

In one section or how many?_____________________

Diameter to tips of teeth?__________________feet.

Length of teeth?________________inches.

Teeth sharp or blunt?__________________________

Are teeth in regular or irregular rows?___________

How are teeth fastened in?______________________

Distance beater projects below top or apron?_______

How many bars?________________________________

Bars—wood or steel?

Have bars center support?_______________________

Can beater be operated without moving apron?_____

Beater (Auxiliary).

Diameter to tips of teeth?______________________

How many bars?____________________________

Bars—wood or steel?

Length of teeth in inches?____________________

Which direction does this turn with relation to main beater? _____________________________

Rake.

Has spreader a rake?__________________________

Movable or stationary?

How many teeth? ____________________________

Length of teeth?_____________inches.

Is it flexible enough to allow passage of larger lumps? __________________________________

Apron.

Endless or return?

Does apron slide over solid floor?_______________

Has apron rollers?___________________________

How many rollers?___________________________

Apron self cleaning? ________________________

Can apron be tightened?______________________

Return apron by power, hand or both?

How are slats fastened to apron?________________

How is apron tightened?_______________________

Beater Drive.

Power transmitted from drive wheel by gears, chain or both?

Chain—steel or malleable, with or without steel pins

Chain tightener? ____________________________

Driven from one or both sides?__________________

When starting up does beater retreat a little at first?

____

Size of beater shaft?____________inches.

Gearing well protected? ______________________

Where is clutch located?______________________

Number of revolutions main beater makes to one revolution of wheels?________________________

Number of revolutions auxiliary beater makes to one revolution of wheels?_______________________

How does number of feet travelled by outside of main beater and wheel compare?____________

Beater travel?______feet? wheel travel?______feet.

Apron Drive.

Rachet or worm?

How is power obtained to drive apron?____________

How many speeds?__________________________

Can speeds be changed while spreader is in motion?

____

Does worm run in oil?__________________________

Is rachet single or double?______________________

If rachet drive is there any provision made to prevent apron from racing when going up hill?____

Gearing well protected?________________________

Distance travelled by apron during one revolution of main wheel?—max.________feet; min.________ft.

Bearings.

Main axle have roller bearings?__________________

Beaters have roller bearings?___________________

How many roller bearings on machine?____________

Do all roller bearings have self aligning boxes?____

How lubricated—by oil or grease cups?___________

How many oil holes?________grease cups-________ on spreader.

Levers.

How many hand?______________________________

How many foot?______________________________

Purpose of each? _____________________________

Can apron be run against beater without running beater? ___________________________________

Can both forward and backward motion of apron be thrown in at the same time?________________

Levers easily operated from seat?_______________

Hitch.

Two or three horse combination?_______________

Thrills used with three horses?__________________

Tongue attached to front axle or frame?__________

Auto type of steering?_________________________

Diameter smallest circle spreader will turn in?____ft.

Miscellaneous.

What is the highest obstruction spreader will clear?

____

Is there a rear end gate? ___ ___ ___ __ _______

How operated? ________________________________

If not, what provision is made to assist in starting to unload? _________________________________

Is there a wide spread attachment?______________

What kind? __________________________________

MANURE SPREADERS.

General Information. **Exercise No. 32.**

Trade name and number?------------------------

Manufacturer? ------------------------

Address? ------------------------------------

Rated capacity?------------bushels.

Box.

Material—wood or steel?

Dimensions? Width-----Length------Depth------

Contents box?---------- cu. ft.-----------bushels
(1 bushel equals 1.25 cubic feet).

Height of top of box above ground?----------feet.

Is box wider at rear than at front?--------------

Does bed slope to rear?------------------------

How much? ----------------------------------

Does boxes have tight bottom?-----------------

Does apron have two or three rails to roll on?------

Can sides be let down?------------------------

Wheels.

Material—wood or steel?

Size—diameter of front-------; rear-------feet.

Width of front--------; rear--------feet.

Kind traction lugs? --------------------------

Wheels track? ------------------------------

Width of track? Front-----------inches.

Width of track? Rear------------inches.

Diameter of axles?-------------inches.

Spokes cast in hub and upset in rim?------------

Rims flanged? ------------------------------

Beater (Main).

In one section or how many?------------------

Diameter to tips of teeth?-----------------feet.

Length of teeth?---------------inches.

Teeth sharp or blunt?------------------------

Are teeth in regular or irregular rows?-----------

How are teeth fastened in?--------------------

Distance beater projects below top or apron?----in.

How many bars?------------------------------

Bars—wood or steel?

Have bars center support?----------------------

Can beater be operated without moving apron?-----

Beater (Auxiliary).

Diameter to tips of teeth?______________________

How many bars?________________________________

Bars—wood or steel?

Length of teeth in inches?_____________________

Which direction does this turn with relation to main beater? ____________________________

Rake.

Has spreader a rake?__________________________

Movable or stationary?

How many teeth? ______________________________

Length of teeth?_____________inches.

Is it flexible enough to allow passage of larger lumps? __________________________________

Apron.

Endless or return?

Does apron slide over solid floor?_______________

Has apron rollers?____________________________

How many rollers?____________________________

Apron self cleaning? __________________________

Can apron be tightened?_______________________

Return apron by power, hand or both?

How are slats fastened to apron?_______________

How is apron tightened?_______________________

Beater Drive.

Power transmitted from drive wheel by gears, chain or both?

Chain—steel or malleable, with or without steel pins

Chain tightener? _____________________________

Driven from one or both sides?_________________

When starting up does beater retreat a little at first?

____

Size of beater shaft?__________inches.

Gearing well protected? _______________________

Where is clutch located?_______________________

Number of revolutions main beater makes to one revolution of wheels?_______________________

Number of revolutions auxiliary beater makes to one revolution of wheels?___________________

How does number of feet travelled by outside of main beater and wheel compare?____________

Beater travel?______feet? wheel travel?______feet.

Apron Drive.

Rachet or worm?

How is power obtained to drive apron?____________

How many speeds?______________________________

Can speeds be changed while spreader is in motion?

____

Does worm run in oil?___________________________

Is rachet single or double?_______________________

If rachet drive is there any provision made to prevent apron from racing when going up hill?____

Gearing well protected?_________________________

Distance travelled by apron during one revolution of main wheel?—max.________feet; min.________ft.

Bearings.

Main axle have roller bearings?___________________

Beaters have roller bearings?_____________________

How many roller bearings on machine?____________

Do all roller bearings have self aligning boxes?____

How lubricated—by oil or grease cups?___________

How many oil holes?_________grease cups?________ on spreader.

Levers.

How many hand?_______________________________

How many foot?_______________________________

Purpose of each? ______________________________

Can apron be run against beater without running beater? ___________________________________

Can both forward and backward motion of apron be thrown in at the same time?_________________

Levers easily operated from seat?________________

Hitch.

Two or three horse combination?________________

Thrills used with three horses?__________________

Tongue attached to front axle or frame?___________

Auto type of steering?__________________________

Diameter smallest circle spreader will turn in?___ft.

Miscellaneous.

What is the highest obstruction spreader will clear?

____

Is there a rear end gate?________________________

How operated? _______________________________

If not, what provision is made to assist in starting to unload? __________________________________

Is there a wide spread attachment?______________

What kind? __________________________________

Which of the spreaders studied do you prefer?_____

LIME SPREADERS.

General Information. **Exercise No. 33.**

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Box.

Cubical contents?_____________cu. inches.

Approximate pounds lime it will hold?__________lbs.

Shape of end?_______________________________

Well trussed? _______________________________

Material in box?_____________________________

What kind of agitator?________________________

How is agitator driven?_______________________

Cover in one or two pieces?___________________

Force Feed.

Type? ______________________________________

Material? ____________________________________

Valves.

How is amount of lime distribution regulated?_____

What are the limits in pounds per acre?___________

How is power transmitted to valve shaft?_________

Levers.

How many? __________________________________

Purpose of each?______________________________

Wheels.

Wood or steel?

Diameter? ___________________feet.

Width of tire?_________________inches.

Width of track?________________inches.

Type of bearings on axles—plain, roller,—self aligning.

Miscellaneous.

Seat or foot board?____________________________

Land measure provided?________________________

Can it be adjusted?____________________________

LIME SPREADERS.

General Information. **Exercise No. 33.**

Trade name and number?______________________

Manufacturer? ______________________________

Address? ___________________________________

Box.

Cubical contents?___________ cu. inches.

Approximate pounds lime it will hold?__________lbs.

Shape of end?_______________________________

Well trussed? ______________________________

Material in box?____________________________

What kind of agitator?______________________

How is agitator driven?_____________________

Cover in one or two pieces?_________________

Force Feed.

Type? ______________________________________

Material? __________________________________

Valves.

How is amount of lime distribution regulated?_____

What are the limits in pounds per acre?___________

How is power transmitted to valve shaft?__________

Levers.

How many? __________________________________

Purpose of each?____________________________

Wheels.

Wood or steel?

Diameter? ____________________feet.

Width of tire?________________inches.

Width of track?_______________inches.

Type of bearings on axles—plain, roller,—self aligning.

Miscellaneous.

Seat or foot board?_________________________

Land measure provided?______________________

Can it be adjusted?_________________________

Which of the spreaders studied do you prefer?____

WAGONS.

General Information. **Exercise No. 34.**

Trade name and number?________________________

Manufacturer? ____________________________

Address? ______________________________

Size? ________________________________

Capacity? ______________________lbs.

Wheels.

Material—wood or steel?

Bore of hubs—straight or tapered?

Diameter of front wheels?______feet______inches.

Diameter of rear wheels?______feet______inches.

Width of tires?___________________

Thickness of tires?______________inches.

Width of track?_________feet_________inches.

Amount of dish?________________inches.

Amount of front gather?_________inches.

Amount of bottom gather?_________inches.

Felloe bent or sawed?

Axles.

Material—wood or steel?

Reinforced or trussed?

Skein—cast or steel?

Skein diameter?_________________inches.

Skein length?___________________inches.

Bolsters.

Material—wood or steel?

Provided with rings?___________________________

Well made and reinforced?

Reach.

Material—wood or steel?

Adjustable as to length?

Metal sleeve through rear bolster?

Fifth Wheel.

Has wagon a fifth wheel?________________________

Well made? _________________________________

Box.

Size—length__________feet; width__________feet; depth____________feet.

Rubbing plates for bolsters?___________________

Iron plate to prevent front wheel from rubbing box? ______________________

Can upper box be locked to lower one?___________

How many cross pieces under floor of box?________

Thickness of floor?_________________inches.

Endgate—straight or broken?

Seat—well made? ___________________________

Hitch.

Substantial pole? ____________________________

Double trees well made and reinforced?

Drop or army tongue?

Stay chains? ________________________________

Miscellaneous.

Brake? ___________________________________

WAGONS.

General Information. **Exercise No. 34.**

Trade name and number?_______________________
Manufacturer? _______________________________
Address? ______________________________________
Size? ____
Capacity? ______________________lbs.

Wheels.

Material—wood or steel?
Bore of hubs—straight or tapered?
Diameter of front wheels?______feet______inches.
Diameter of rear wheels?______feet______inches.
Width of tires?____________________
Thickness of tires?_______________inches.
Width of track?_________feet_________inches.
Amount of dish?_________________inches.
Amount of front gather?__________inches.
Amount of bottom gather?_________inches.
Felloe bent or sawed ?

Axles.

Material—wood or steel?
Reinforced or trussed?
Skein—cast or steel?
Skein diameter?__________________inches.
Skein length?____________________inches.

Bolsters.

Material—wood or steel?
Provided with rings?____________________________
Well made and reinforced?

Reach.

Material—wood or steel?
Adjustable as to length?
Metal sleeve through rear bolster?

Fifth Wheel.

Has wagon a fifth wheel?_________________________
Well made? ____________________________________

Box.

Size—length___________feet; width___________feet; depth_____________feet.
Rubbing plates for bolsters?_____________________
Iron plate to prevent front wheel from rubbing box? ______________________
Can upper box be locked to lower one?____________
How many cross pieces under floor of box?_________
Thickness of floor?____________________inches.
Endgate—straight or broken?
Seat—well made? _______________________________

Hitch.

Substantial pole? ________________________________
Double trees well made and reinforced?
Drop or army tongue?
Stay chains? _____________________________________

Miscellaneous.

Brake? ____
Which of wagons studied do you prefer?____________

BARREL SPRAYER.

General Information. **Exercise No. 35.**

Trade name and number?________________________

Manufacturer? ______________________________

Address? __________________________________

Barrel.

Capacity?________________gals.

Vertical or horizontal?

On trucks? ________________________________

Well made? _______________________________

Will mixture slop out?________________________

Kind of agitator—dasher or propeller?

Investigate its action?________________________

Pump.

Horizontal or vertical?

What kind of valves?_________________________

Valve seats—iron, brass, or glass?

Valve in piston?______________________________

Size cylinder? _________________inches.

Length of stroke?_______________inches.

Where is air chamber?_________________________

Pump securely fastened?_______________________

Pump easy to operate?_________________________

Nozzle.

How many? ________________________________

Type of nozzle? ____________________________

Length and size of hose?____feet of____inch hose.

Can nozzle be easily cleaned and adjusted?________

BARREL SPRAYER.

General Information. **Exercise No. 35.**

Trade name and number?------------------------

Manufacturer? ---------------------------------

Address? --

Barrel.

Capacity?-----------------gals.

Vertical or horizontal?

On trucks? ---------------------------------------

Well made? ------------------------------------

Will mixture slop out?---------------------------

Kind of agitator—dasher or propeller?

Investigate its action?--------------------------

Pump.

Horizontal or vertical?

What kind of valves?----------------------------

Valve seats—iron, brass, or glass?

Valve in piston?--------------------------------

Size cylinder? -----------------inches.

Length of stroke?----------------inches.

Where is air chamber?--------------------------

Pump securely fastened?------------------------

Pump easy to operate?--------------------------

Nozzle.

How many? -------------------------------------

Type of nozzle? ---------------------------------

Length and size of hose?---feet of ----inch hose.

Can nozzle be easily cleaned and adjusted?--------

Miscellaneous.

Which sprayer studied do you prefer?------------

POWER SPRAYER.

General Information. **Exercise No. 36.**

Trade name and number?________________________

Manufacturer? ________________________

Address? ________________________

Tank (Solution).

Capacity?__________________gallons.

Shape? ________________________

Material?—steel or wood?

How is tank filled? ________________________

How is tank drained?________________________

Kind of agitator?________________________

How is agitator driven?________________________

How is suction strainer removed?________________

Pump.

Type of pump?________________________

If plunger, how many cylinder?________________

Can cylinders be drained?________________________

What kind of valves?________________________

Valve seats,—iron, brass, or glass?

Size of cylinder?______________inches.

Length of stroke?________________________

Single or double acting?

Pump securely fastened?________________________

How are cylinders drained?________________________

How is pressure regulated?________________________

Can air be supplied to air dome?.________________

Power.

H. P. of engine?________________________

Trade name and number?________________________

Manufacturer? ________________________

Address? ________________________

R. P. M.?________________________

How many cylinders?________________________

Horizontal or vertical?

Power transmitted to pump by direct gears, connecting rod or belt?

Engine fastened securely to base?______________

Nozzles.

How many? ______________________

Type of nozzle? ______________________

How many lines of hose? ______________________

Length of hose? ________ feet of ________ inch hose.

Can nozzle be easily cleaned and adjusted? ________

Material in extension rods? ______________________

Length of rods? ________________ feet.

Truck.

Diameter wheels? ________________ feet.

Width of tire? ________________ inches.

Width of tread? ________________ inches.

Material in wheels—wood or steel?

Does truck appear well built and strong enough to handle the heavy load and vibration? ________

What size circle can turn in? ________________ feet.

Tower.

Material—steel or wood?

Where located on frame? ______________________

Height of top above ground? ________________ feet.

Anything to prevent operator from falling off tower?

Miscellaneous.

Is machine easily lubricated? ______________________

Where is relief valve located? ______________________

What is its purpose? ______________________

POWER SPRAYER.

General Information. **Exercise No. 36.**

Trade name and number?------------------------

Manufacturer? ------------------------------

Address? ----------------------------------

Tank (Solution).

Capacity?------------------gallons.

Shape? ---------------------- --------------

Material?—steel or wood?

How is tank filled? --------------------------

How is tank drained?---------------------------

Kind of agitator?-------------------.----------

How is agitator driven?------------------------

How is suction strainer removed?---------------

Pump.

Type of pump?---------------------------------

If plunger, how many cylinder?-----------------

Can cylinders be drained?----------------------

What kind of valves?---------------------------

Valve seats,—iron, brass, or glass?

Size of cylinder?--------------inches.

Length of stroke?------------------------------

Single or double acting?

Pump securely fastened?------------------------

How are cylinders drained?---------------------

How is pressure regulated?---------------------

Can air be supplied to air dome?.---------------

Power.

H. P. of engine?-------------------------------

Trade name and number?------------------------

Manufacturer? ----------------------------

Address? ----------------------------------

R. P. M.?------------------------------.-----

How many cylinders?---------------------------

Horizontal or vertical?

Power transmitted to pump by direct gears, connecting rod or belt?

Engine fastened securely to base?---------------

Nozzles.

How many? ________ ___ __ ____ ______ _ ________

Type of nozzle?_______ ______ ____ __ __ _____

How many lines of hose?______________________

Length of hose?________feet of________inch hose.

Can nozzle be easily cleaned and adjusted?________

Material in extension rods?____________________

Length of rods?_______________feet.

Truck.

Diameter wheels?_______________feet.

Width of tire?_______________inches.

Width of tread?______________inches.

Material in wheels—wood or steel?

Does truck appear well built and strong enough to handle the heavy load and vibration?_________

What size circle can turn in?________________feet.

Tower.

Material—steel or wood?

Where located on frame?______________________

Height of top above ground?______________feet.

Anything to prevent operator from falling off tower?

Miscellaneous.

Is machine easily lubricated?____________________

What is its purpose?___________________________

Which of the sprayers studied do you prefer?_______

EVENERS.

Instructions. **Exercise No. 37.**

Make sketches below and on the next page of the eveners assigned by the instructor. Show the following dimensions: Length of single trees, double trees, eveners; distance between all holes and the position of the holes (that is whether they are in line or not). Be careful to make sketches clear and neat. Under each sketch note the following;—how many horses the evener is for, machine that evener is intended to be used on, and material of which it is made.

Also show by dotted lines the relative positions of each evener and the relative length of lever arms when evener is swung 30 degrees from normal. Also note above each figure the load of each horse when the evener is in this position and the total pull is 300 lbs.

EVENERS.

(Continued).

SULKY AND GANG MOULDBOARD PLOW ASSEMBLING.

Instructions. **Exercise No. 381**

Take apart and reassemble one sulky or gang mouldboard plow.

Taking Apart.

Take apart in the following order:
Remove seat.
Remove levers.
Remove coulters.
Remove weed hook.
Remove plow bottom and beams.
Remove wheels.
Call attention of the instructor to the fact that you now have plow disassembled.

Reassemble.

Put plow back together in the reverse order that you took it apart.

Report.

Trade name and number?____________

Manufacturer? ______________________________

Address? ______________________________________

Time required to do work?_____________minutes.

Date________________________, 192___

MOWER ASSEMBLING.

Instructions. **Exercise No. 39.**

Take one mower apart and reassemble and fill out report.

Taking Apart.

Remove each part in the following order, paying attention to how and where each piece goes.

Remove seat.
Sickle.
Pitman.
Inside divider and shoe.
Grass board and outside shoe.
Draw bar.
Levers.
Cutter bar.
Tongue.
Wheels.
Call attention of instructor that you have the mower disassembled.

Reassemble.

Put back together in reverse order that it was taken apart. See that it works all right.

Report.

Trade name and number?----------------------

Manufacturer? ------------------------------

Address? ------------------------------------

Date------------------------, 192---

Time required to do work?-----------------hours.

Number of men working?----------------------

Note:—Any broken parts found or any missing parts noted report facts to instructor.

MOWER REPAIR.

Instructions. **Exercise No. 40.**

A mower just as it quits work at the end of the season will be assigned to the class. This mower is to be entirely overhauled, cleaned, adjusted and new parts put in whereever necessary. Go over the machine in the following order:

Wheels.

Take off wheels, remove pawls, examine, clean, and put back. Take up all play on axle by means of washers.

Gearing.

Clean gearing, determine if gears mesh properly; if not, adjust, or if too badly worn, put in new one. Investigate bearings.

Crank Shaft.

Investigate bearings.

Pitman.

Investigate bearings. If pitman badly damaged, put in new one. Straighten bar in front of pitman if it is bent.

Cutter Bar.

Line up. Investigate ledger plates, line up guards. Examine grass board and inside and outside shoes.

Levers.

Investigate operation.

Hitch.

Examine carefully—draft rods, double trees and neck yoke.

After machine is thoroughly overhauled and put in first-class shape, be sure all grease and dirt are off, then paint it.

Report.

Trade name and number?________________________

Manufacturer? _______________________________

Address? _____________________________________

Width of cut?_______________________________

Number of years has been operated?_____________

Time required to put in shape?____________hours.

Number of men working?_________________________

Amount of paint used?____________________quarts.

List of repairs used:

Catalog No.	Name of Pieces	Price

Date______________________192___

BINDER ATTACHMENT ADJUSTMENT.

Instructions. **Exercise No. 41.**

Adjust binder attachment on grain binder so it will tie small tight bundles. Tie ten bundles in order to be sure that it will not miss. Readjust so it will tie large tight bundles. Tie ten bundles with it adjusted this way. When finished fill in report at bottom of page.

The following instructions will be of assistance in making the adjustments and if anything should go wrong they will assist in finding just what the trouble is.

In adjustment of the springs for tension it would be well to turn the nut only ¼ turn at a time until the proper tension is obained.

Cord holder or twine disc spring. This should grip the twine tight enough that there is only a slight slippage of the twine in the disc when knotter revolves. If too tight, twine is broken. If too loose, twine will slip out from the disc.

Knotter spring. If too tight, twine wll be broken when knot is tied. If too loose, the knot will not be tied tight and may come undone when the bundle is handled.

Bundle sizer spring. This is the spring whose tension must be overcome to throw binder into gear for tieing a bundle. It regulates the tightness of packing, and to some extent the size of bundle. If band is loose on bundle this spring is probably too loose. Do not attempt to remedy a loose band by making twine tension very tight.

Twine tension. This should be only tight enough to keep the slack out of the twine. It is not used to make the machine tie tight bundles.

Knife. The knife should be snug up against the twine at the instant the knotter closes so the next movement will cut the twine and strip the twine from the knotter. If it is attached by a malleable arm, the arm may be bent. Knife must be sharp.

Needle. The needle is of malleable iron, and sometimes gets sprung up so that it does not deposit the twine in the twine disc. It should clear the twine disc by ¼ inch and pass over far enough to make sure of placing twine in the disc. It may be bent to the proper shape if it has been sprung.

Report.

Trade name and number?____________________

Manufacturer? _________________________

Address? ________________________________

Chain or gear drive?___________________________

Has the knotter a stripper?_____________________

How do you change the size of bundles?__________

How do you change the tightness of bands?_______

BINDER ATTACHMENT ASSEMBLING.

Instructions. **Eercise No. 42.**

Take apart one binder attachment in order given below and fill in report at bottom of page.

Taking Apart.

Remove each part in the following order, paying attention to how and where each piece goes:

Remove pitman and rock lever.
Remove main gear.
Remove needle.
Remove packers.
Remove clutch ratchet.
Remove clutch dog.
Remove springs.
Remove knotter hook.
Remove stripper and knife.
Remove twine holder.

Call attention of the instructor to the fact that you now have attachment disassembled.

Reassemble.

Put back together again in the reverse order that you took it apart. See that it works right.

Report.

Trade name and number?------------------------

Manufacturer? ----------------------------------

Address? -------------------------------------

Chain, lever or gear drive?

Has knotter a stripper?-------------------------

Can adjustment be made for wear in twine holder?

Steel rollers in eye of needles?------------------

Date------------------192---

Time required to do work?----------------hours.

Number of men doing work?---------------------

CORN PLANTER CALIBRATION.

Instructions. **Exercise No. 43.**

Calibrate a two-row corn planter dropping one, two and three kernels to the hill for 100 hills, using unsorted corn and sorted corn. Keep a record of the number of kernels dropped for each hill and record in table. Use plate that will give best results.

Report.

Trade name and number?.......

Manufacturer? ....

Address? ....

Variety of corn used?..............................

Unsorted Corn.

Number of Kernels Dropped	0	1	2	3	4	5	No. of Plate
Set for 1 Kernel							
Set for 2 Kernels							
Set for 3 Kernels							

Sorted Corn.

Number of Kernels Dropped	0	1	2	3	4	5	No. of Plate
Set for 1 Kernel							
Set for 2 Kernels							
Set for 3 Kernels							

GRAIN DRILL CALIBRATION.

Instructions. **Exercise No. 44.**

Calibrate a grain drill with two different kinds of seed, make two tests with each seed, sowing different amounts each time.

Measure width of drill and circumference of wheel in feet. Determine the number of revolutions that wheel must turn in order to plant an acre.

Get from instructor sufficient clean seed to over half fill seed box. He will also tell you the amounts to sow per acre. Set the drill to sow one of these amounts. Put under each spout a separate vessel, such as a paper sack, to catch the seed. Turn wheel until seed is running in good shape from each spout. Then empty each sack back in seed box. Then start calibration—turn wheel number of revolutions to plant one-half acre. Be careful to turn wheel at about same speed as it will run in field.

Report.

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Width of drill?______________feet.

Circumference of wheels?______________________

Revolution of wheels to sow acre?_______________

Fill out the following tables:

Kind of seed?__________. Rates per Acre?_________

Seed From Each Sprout in Pounds						Total Seed Sown	Rev. Wheel to sow seed	Acres Sowed	Per Cent Error

GRAIN DRILL CALIBRATION.
(Continued)

Kind of seed?__________. Rates per Acre?__________

<table>
<tr><th colspan="6">Seed From Each Sprout in Pounds</th><th>Total Seed Sown</th><th>Rev. Wheel to sow seed</th><th>Acres Sowed</th><th>Per Cent Error</th></tr>
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CORN GRADER TEST.

Instructions. **Exercise No. 45.**

Using two different corn graders, grade five ears of corn with each. Make report as follows:

Report.

General Information

Grader No. 1.

Trade name and number?____________________

Manufacturer? ______________________________

Address? ___________________________________

Rated capacity?_______________bushels per hour.

Grader No. 2.

Trade name and number?____________________

Manufacturer? ______________________________

Address? ___________________________________

Rated capacity?_______________bushels per hour.

Name of Grader	No. 1	No. 2
Weight of Tips and Butts		
Weight of Graded Corn		
Weight of Small Corn		
Total		
Per cent of Good Corn		
Time Started		
Time Finished		
Bushels Per Hour		

FANNING MILL TEST.

Instructions. **Exercise No. 46.**

Make two different tests with assigned fanning mill using following seeds in tests:
Clean and grade oats.

Clean and grade________________________

Separate____________ from____________

Select sieves you think will do best and try two different sets. Record all results in table below. Seed will be supplied by instructor.

Report.

Trade name and number?________________________

Manufacturer? ________________________________

Address? ____________________________________

Date_________________192___.

GRAINS	OATS					
Runs	1	2	1	2	1	2
Screen No.						
Sieves No.						
Weight Original Grain						
First Grade						
Second Grade						
Third Grade						
Tailings						
Time Started						
Time Finished						
Time Required						
Bushels per Hr.						
R. P. M.						

DRAFT OF HORSE.

Instructions. **Exercise No. 47.**

Take stone boat and horse out on a smooth, level road. Attach the dynamometer between the boat and the single tree. Make the following tests:

First: With light load and height of hitch low, medium and horizontal, make tests with close hitch.

Second: With light load and height of hitch low, medium and horizontal, make test 50 foot extension.

Third. With medium load and height of hitch low, tests with 50 foot extension.

Fifth. With maximum load and height of hitch low, medium and horizontal, make tests with close hitch.

Sixth. With maximum load and horizontal hitch, make tests with 50 foot extensions.

Make all measurements called for on report sheet, and record all results obtained on the same sheet. Instructor will explain how results are to be computed.

Report.

Horse (breed)? ____________________Weight?________

General type and build?______________________________

Kind of shoes on horse?______________________________

Height of hitch at hame?________________inches.

Height of hitch at rear? low_____________inches.

Height of hitch at rear? low____________inches; medium

________inches; horizontal_______inches.

Weights of loads? light_______lbs.; medium_________lbs.

maximum_________lbs.

Load	Height of Hitch Rear	Hitch Extension	*Slope of Trace	Angle of Trace	Time	Distance Passed Thru	Draft	Per Cent Wt of Horse	H. P. Developed
Light	Low	Close							
"	Medium	"							
"	Horz.	"							
"	Low	50'							
"	Medium	50'							
"	Horz.	50'							
Medium	Low	Close							
"	Medium	"							
"	Horz.	"							
"	Horz.	50'							
Maximum	Low	Close							
"	Medium	"							
"	Horz.	"							
"	Horz.	50'							

*Slope $= \frac{h}{l}$

DRAFT OF PLOWS

Instructions. **Exercise No. 48**

The instructor will give students instruction as to just what is to be done; the equipment to be used and the place provided for the test. The object of this exercise is to show the influence on the draft of plows of the following: Sharpness of share, poor and good set of plow, type of plow, speed, depth of plowing and type of soil.

Fill out following report on plows and should more than three plows be used give the same information for them.

Report.

Trade name and number of plow?_______________

Test numbers this plow used in?_______________

Trade name and number of plow?_______________

Test number this plow used in?_______________

Trade name and number of plow?_______________

Test numbers this plow used in?_______________

Number of Tests.

	1	2	3	4	5	6	7	8	9	10
Furrow Average Width										
Furrow Average Depth										
Furrow Average Length										
Number Square Inches										
Time in Seconds										
Draft in Pounds										
Character of Soil										
Results: Feet Per Second										
Miles per Hour										
Horse Power										
Draft Per Sq. Inch of Furrow (Lbs.)										

State below number of test, what condition plow was in and what was object of test.

DRAFT OF WAGONS.

Instructions. **Exercise No. 49.**

The instructor will give student instructions as to just what is to be done, the equipment to be used and the place provided for the test. The object of this exercise is to show the factors that influence the draft of a wagon.

Fill out the following report and should more than one wagon be used, give the same information for the others.

Report.

Trade name and number of wagon?-------------

Manufacturer? ---------------------------------

Address? ------------------------------------

Width of track?--------------inches.

Length of wheel base?------------inches.

Weight of wagon?---------------lbs.

Condition of wagon?--------------------------

Gross Load					
Location of Load					
Length of Run					
Time in Seconds					
Draft in Pounds					
Character of Roadbed					
Horse Power					
Draft per Ton					
Width of Tire					
Height of Wheels					

MEMORANDUM.

MEMORANDUM.

MEMORANDUM.

MEMORANDUM.

MEMORANDUM.

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